

# CONSTRUCTION PLANS FOR FIAT OF WILMINGTON 6421 MARKET STREET

WILMINGTON

NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

Approved Construction Plan

Name

Date

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

CFPUA \_\_\_\_\_

## NOTES

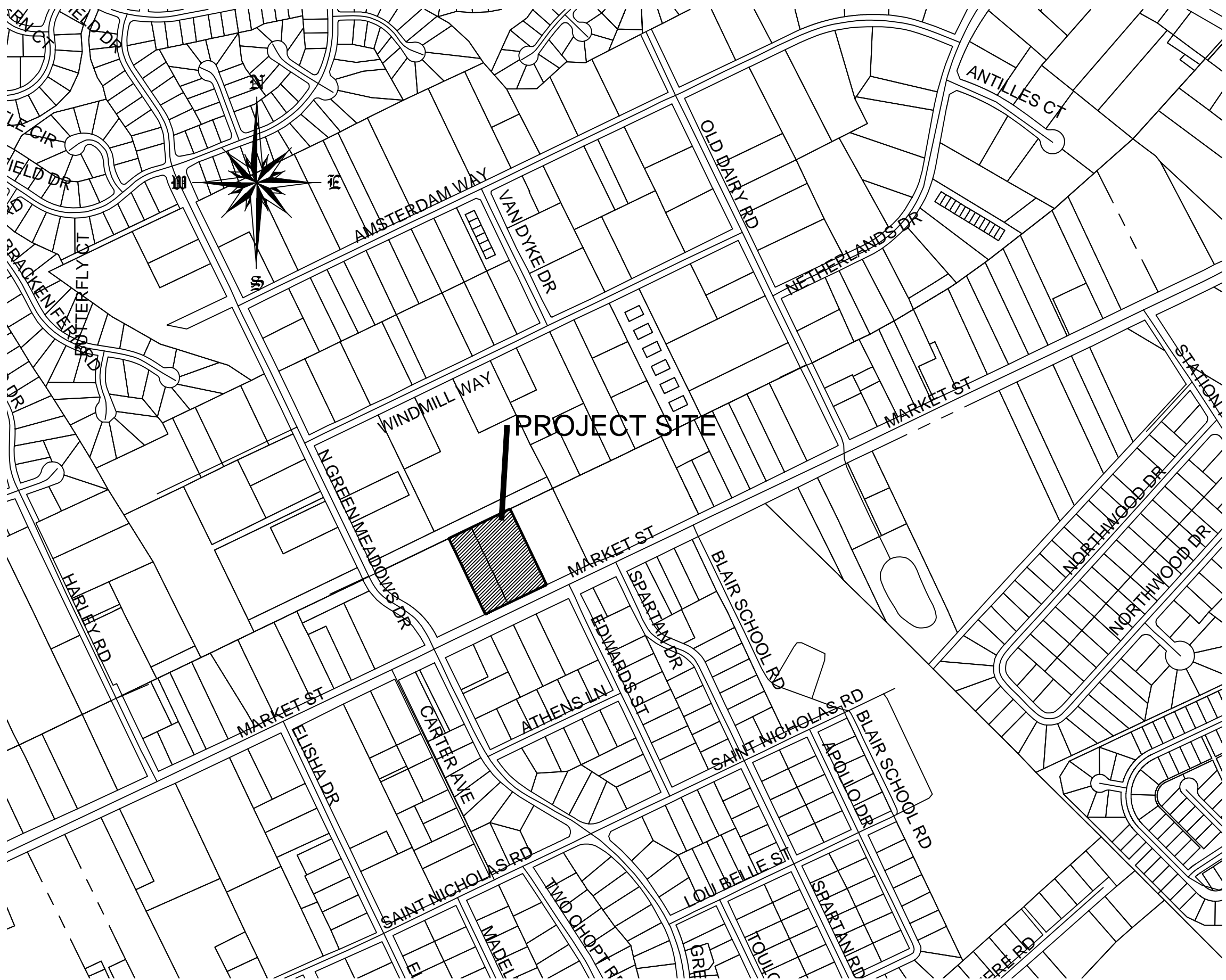
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2. THERE SHALL BE NO ENCUMBRANCES WITHIN THE NCDOT RIGHT OF WAY.
3. ALL MATERIALS UTILIZED IN THE CONSTRUCTION OF THE UTILITIES WITHIN THE PUBLIC RIGHT OF WAY SHALL BE NCDOT APPROVED MATERIALS.
4. CONTRACTOR IS TO PROVIDE ALL NECESSARY TRAFFIC AND SAFETY CONTROL DEVICES IN WORK AREAS.
5. FIELD VERIFY EXISTING UTILITIES FOR CONFLICTS PRIOR TO CONSTRUCTION, NOTIFY ENGINEER AT 910-619-9990 BEFORE PROCEEDING WITH CONSTRUCTION.
6. CONTRACTOR IS TO NOTIFY (AT A MINIMUM) THE FOLLOWING COMPANIES FOR LOCATION SERVICES:  
ULOCO .....1-800-632-4949, 48 HOURS IN ADVANCE  
BELL SOUTH.....1-800-392-8712 (STEVE DAYVAULT)
7. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING (IF REQUIRED) WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION.
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9. It shall be the responsibility of the subdivider to erect official street name signs at all intersections associated with the subdivision in accordance with the Technical Standards and Specifications Manual. The subdivider may acquire and erect official street name signs or may choose to contract with the city to install the street signs and the subdivider shall pay the cost of such installation. Contact Traffic Engineering at 341-7888 to discuss installation of traffic and street name signs. Proposed street names must be approved prior to installation of street name signs.
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11. TRAFFIC ENGINEERING TO BE NOTIFIED AT 341-788 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
12. Any broken or missing sidewalk panels and curbing will be replaced.
13. CONTACT KAREN DIXON AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
14. PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METRES CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL.
15. IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY MIN ADVANCE FOR THIS SERVICE AND MUST SUPPLY A RPZ BACKFLOW PREVENTION DEVICE ON THE DEVELOPERS SIDE OF THE WATER METER BOX.
16. ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA SHALL COMPLY WITH THE CFPUA CROSS CONNECTION REGULATIOS

**OWNER/DEVELOPER**  
**G & G PARTNERS 2, LLC**  
**MR. JOHN GILLILAN**  
**219 COLLEGE ROAD**  
**WILMINGTON, NC 28406**  
**1-910-799-1815**

**CIVIL ENGINEER**  
**JBS CONSULTING, PA**  
**BRAD SEDGWICK, PE**  
**7332 COTESWORTH DRIVE**  
**WILMINGTON, NC 28405**  
**1-910-619-9990**

**SURVEYOR**  
**GEOINNOVATION, PC**  
**MR. DEAN EXLINE, PLS**  
**311 JUDGES ROAD**  
**SUITE 3D**  
**WILMINGTON, NC 28405**  
**1-910-367-2110**

**GENERAL CONTRACTOR**  
**TMC TAYLOR**  
**MR. GREG TAYLOR**  
**1406 CASTLE HAYNE ROAD**  
**WILMINGTON, NC 28401**  
**1-910-251-1181**



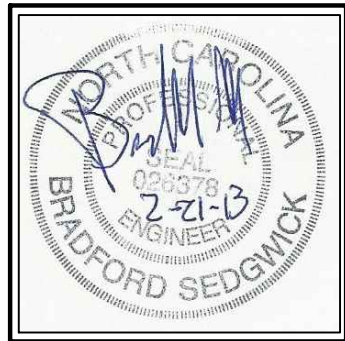
VICINITY MAP  
NOVEMBER. 2012

## ADDITIONAL NOTES

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## LIST OF DRAWINGS

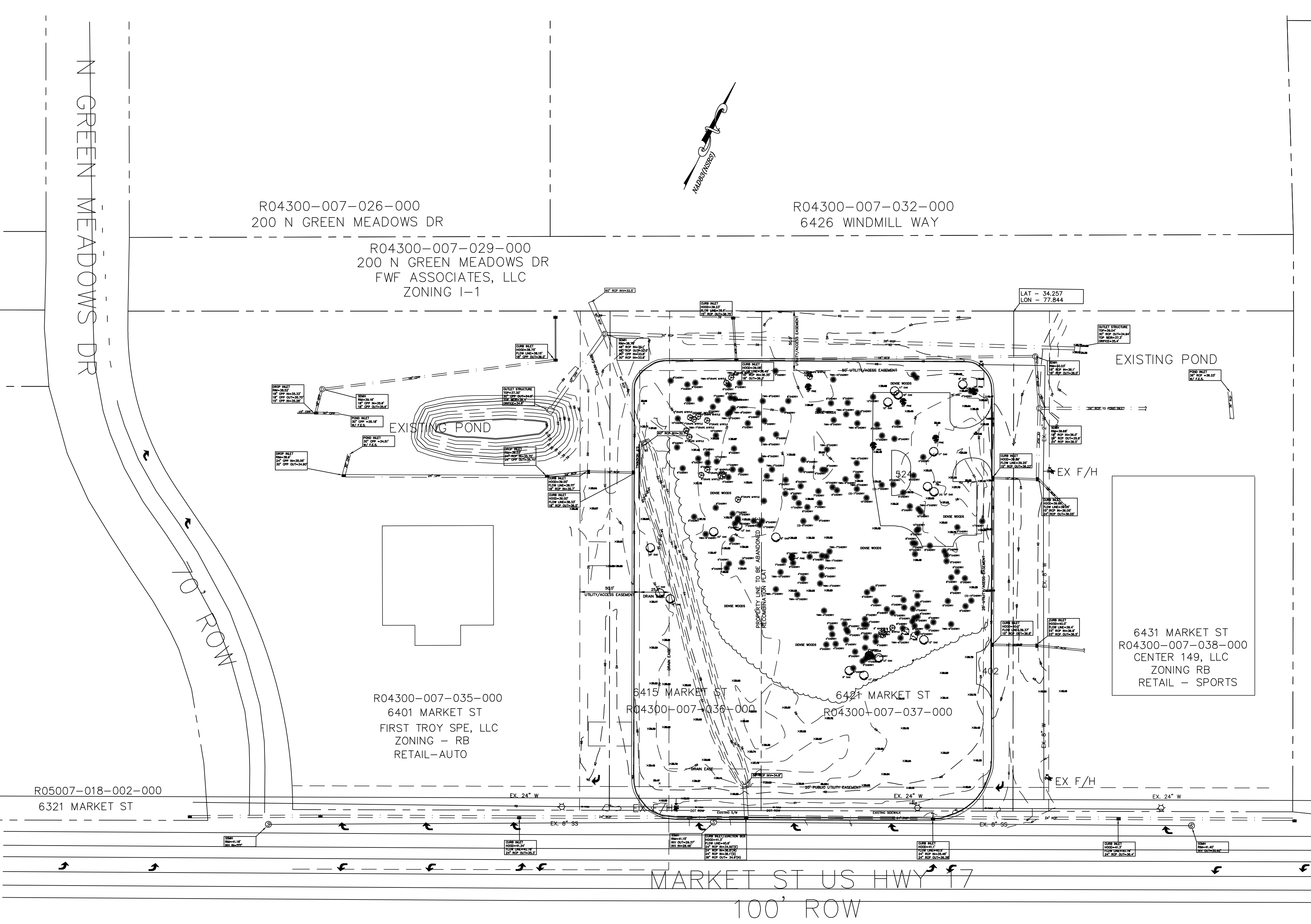
XX	COVER SHEET
C1	EXISTING SITE
C2	SITE PLAN
C3	GRADING
C4	UTILITIES
C5	INFILTRATION SYSTEM
C6	DETAILS
L1	LANDSCAPE PLAN
XX	RECOMBINATION PLAT (PRELIMINARY)
XX	TREE LOCATION SURVEY





REVISION	DATE	DESCRIPTION
R4	2/21/13	RELEASED FOR SAE REVIEW
R2	12/5/12	SUBMITTED WITH TRC COMMENTS ADDRESSED
R1	11/1/12	SUBMITTED FOR TRC REVIEW
NUMBER	DATE	REVISION

2/21/2013 10:31:30 AM, 1:1



**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
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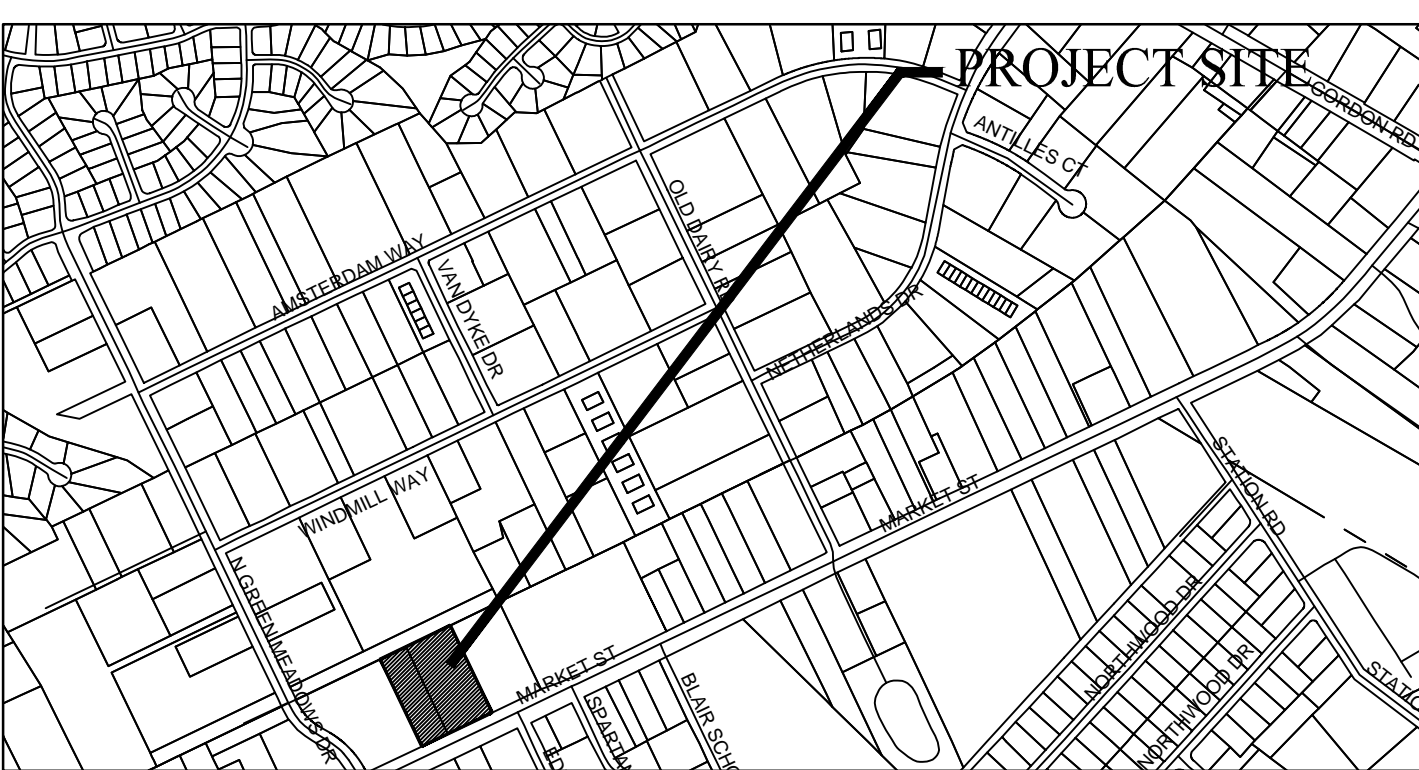
SCALE: 1"=50' (Horiz.)

## EXISTING SITE SCALE 1" = 50'

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## SITE DATA

ADDRESS ..... 6421 MARKET STREET  
WILMINGTON, NC 28403

PARCEL ID NUMBERS ..... R04300-007-037-000  
DEED BOOK & PAGE ..... D.B. 5527 PG. 1251

MAP BOOK & PAGE..... MB 43 PG. 227  
MB 47 PG. 241

ZONING ..... RB-REGIONAL BUSINESS  
CITY OF WILMINGTON

TOTAL LOT AREA ..... 1.20 ACRES (6415)  
2.06 ACRES (6421)  
3.26 ACRES

CAMA LAND USE CLASSIFICATION .. URBAN

PROPOSED USE.....CAR DEALERSHIP

NUMBER OF BUILDINGS ..... 1 PROPOSED

BUILDING SQUARE FOOTAGE..... 10,947 SF

BUILDING COVERAGE..... 10,947 SF / (3.26 AC X 43560) = 7.7%

## PAVEMENT/BUA CALCULATIONS

EXISTING ON SITE 22,356 SF (TO REMAIN)

PROPOSED

ASPHALT	44,493 SF
BUILDING	10,947 SF
CONCRETE	2,827 SF
PERMEABLE CONCRETE	18,695 SF
TOTAL PROPOSED	99,318 SF

## ZONING RB - REGIONAL BUSINESS

	REQUIRED	PROPOSED
MIN. LOT AREA	1 ACRE	3.26 ACRES
MIN. LOT WIDTH	100'	339.01'
MAX. LOT COVERAGE	40%	7.9%
FRONT BUILDING SETBACK	50'	143.1'
REAR BUILDING SETBACK	15'	179.8'
SIDE BUILDING SETBACK	0'	111.9'
RIGHT SIDE		110.4'
LEFT SIDE		18.0'
MAX. BUILDING HEIGHT	35'	

## PARKING REQUIREMENTS

	REQUIRED
NUMBER OF SPACES	1 PER 300 MIN (37 SPACES) 1 PER 200 MAX (55 SPACES)
PROPOSED EMPLOYEE/CUSTOMER PARKING (PROVIDE AT REAR OF BUILDING)	37 SPACES
PROPOSED "INVENTORY" SPACES	74 SPACES
HANDICAP SPACES W/ VAN ACCESS	3 SPACES
TOTAL PROVIDED	116 SPACES

BICYCLE PARKING  
LESS THAN 125 SPACES 5 BICYCLE SPOTS REQUIRED. 5 PROVIDED.

SOLID WASTE - SOLID WASTE DISPOSAL WILL BE BY DUMPSTER. DUMPSTER PAD IS LOCATED IN THE REAR RIGHT HAND SIDE OF THE PARKING LOT. THE DUMPSTER PAD WILL BE SCREENED WITH A CHAIN LINK FENCE WITH BUILDER SLIDES ON ALL SIDES.

## UTILITY INFORMATION

WATER: 000 GPD (CURRENT USE)  
WATER: 1600 GPD (PROPOSED USE) + IRRIGATION (SEPARATE TAP)  
SEWER: 000 GPD (CURRENT USE)  
SEWER: 1375 GPD (PROPOSED USE)

ALL PROPOSED UTILITIES TO BE UNDERGROUND TO SERVE THIS SITE

RECEIVING STREAM SMITH CREEK  
RIVER BASIN CAPE FEAR  
STREAM INDEX NUMBER CPF 17 18-74-63  
WATER CLASSIFICATION "C, Sw"  
LANDSCAPE REQUIREMENTS

## STREET YARD BUFFER

ZONING RB (MULTIPLIER = 25)  
297' FRONTAGE \* 25 = 7425 SF REQUIRED (7528 SF PROVIDED)  
7528 SF = 12.5  
13 CANOPY OR 38 UNDERSTORY TREES AND 75 - 12' SHRUBS

## PARKING LOT LANDSCAPING

ALL INTERIOR ISLANDS GREATER THAN 216 SF  
1 - SHADE TREE PER SMALL ISLAND (4 ISLANDS TOTAL)  
2 - SHADE TREES PER LARGE ISLAND 92 ISLANDS TOTAL)

## PERIMETER LANDSCAPING

923' - 96' (DRIVEWAY) = 827'  
10' MIN WIDTH (12 AVERAGE PROVIDED)  
1 - TREE PER 18' (MAX) OR 27' (MIN)  
46- TREES (MAX)  
31 - TREES (MIN)

## FOUNDATION PLANTINGS

FRONT (18' EAVE HEIGHT) X 115' = 2070 SF X 12% = 250 SF MIN REQUIRED  
339 SF PROVIDED  
EAST SIDE (18' EAVE HEIGHT) X 92' = 1656 SF X 12% = 200 SF MIN REQUIRED  
3003 SF PROVIDED

## WEST SIDE (18' EAVE HEIGHT) X 96' = 1728 SF X 12% = 207 SF MIN REQUIRED

1388 SF PROVIDED

## BUFFER YARD

NOT REQUIRED ON THIS PARCEL

NO WETLAND WITHIN PROJECT AREA



LEGEND	
EXIST. SPOT ELEVATION	20.0
PRO. SPOT ELEVATION	
SILT FENCE	
DRAINAGE RUNOFF FLOW	
LIMITS OF CONSTRUCTION	
ASPHALT	
CONC. PAVEMENT	
GRAVEL	
EDGE OF WOODS	EWDS
TOP OF BANK	TOB
EDGE OF WATER	EW
EDGE OF GRAVEL	EOG

DESIGN BY: BDS  
DRAWN BY: BDS  
CHECKED BY: BDS  
DATE: NOV, 2012

**JBS CONSULTING, PA**  
7332 Cotesworth Drive  
Wilmington, NC 28045  
(910) 619-9990  
LICENSE NUMBER C-2525  
PLANNING - ENGINEERING - PROJECT MANAGEMENT

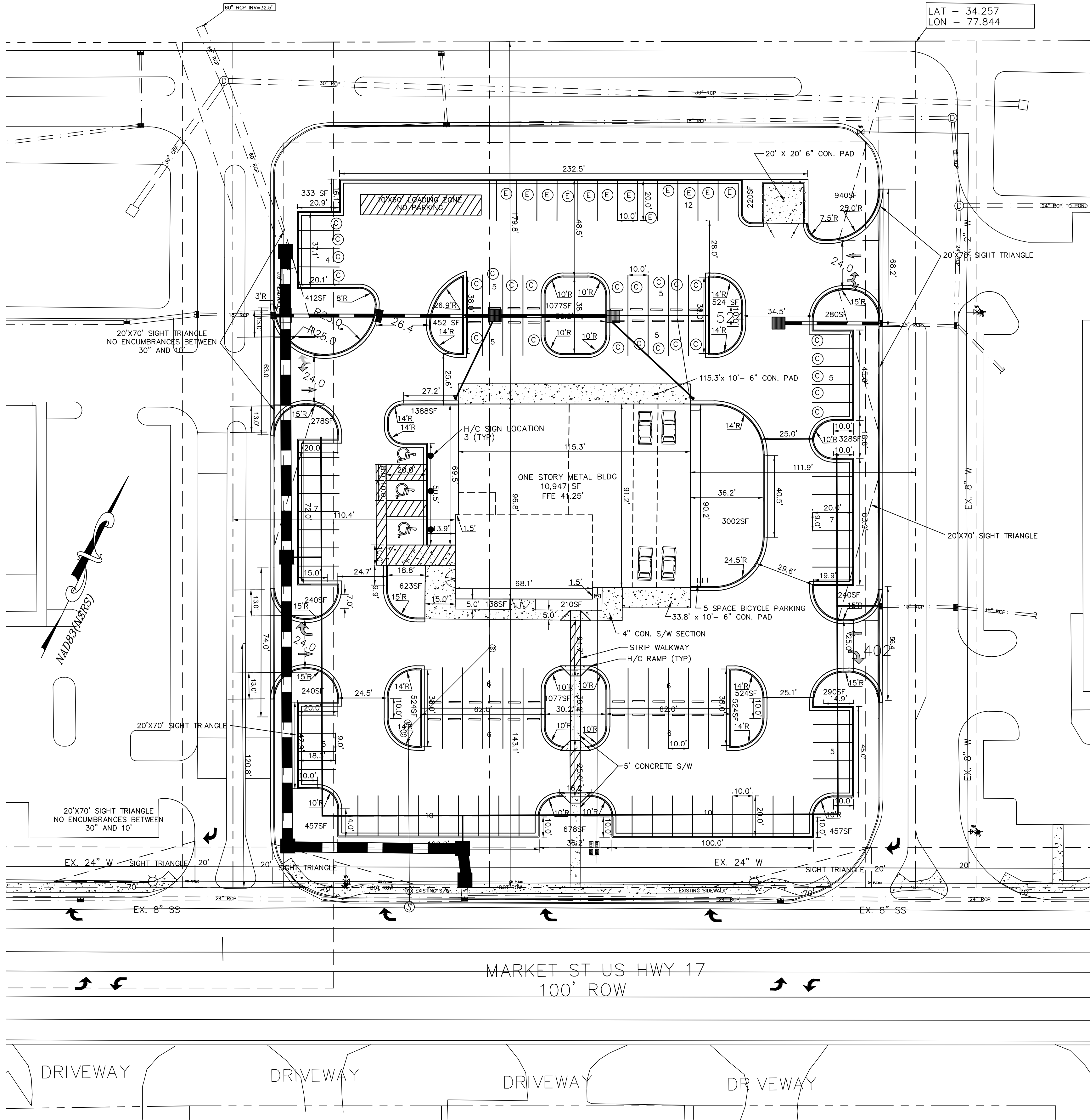
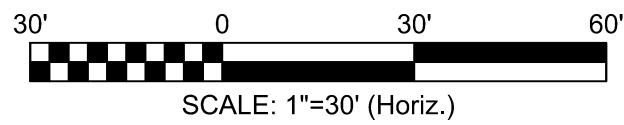
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6421 MARKET STREET  
WILMINGTON, NORTH CAROLINA

**G AND G PROPERTIES 2, LLC**  
JOHN S. GILLILAN, AGENT  
219 COLLEGE ROAD  
WILMINGTON, NC 28406

SHEET  
**C1**  
of  
JOB NO. 032-011



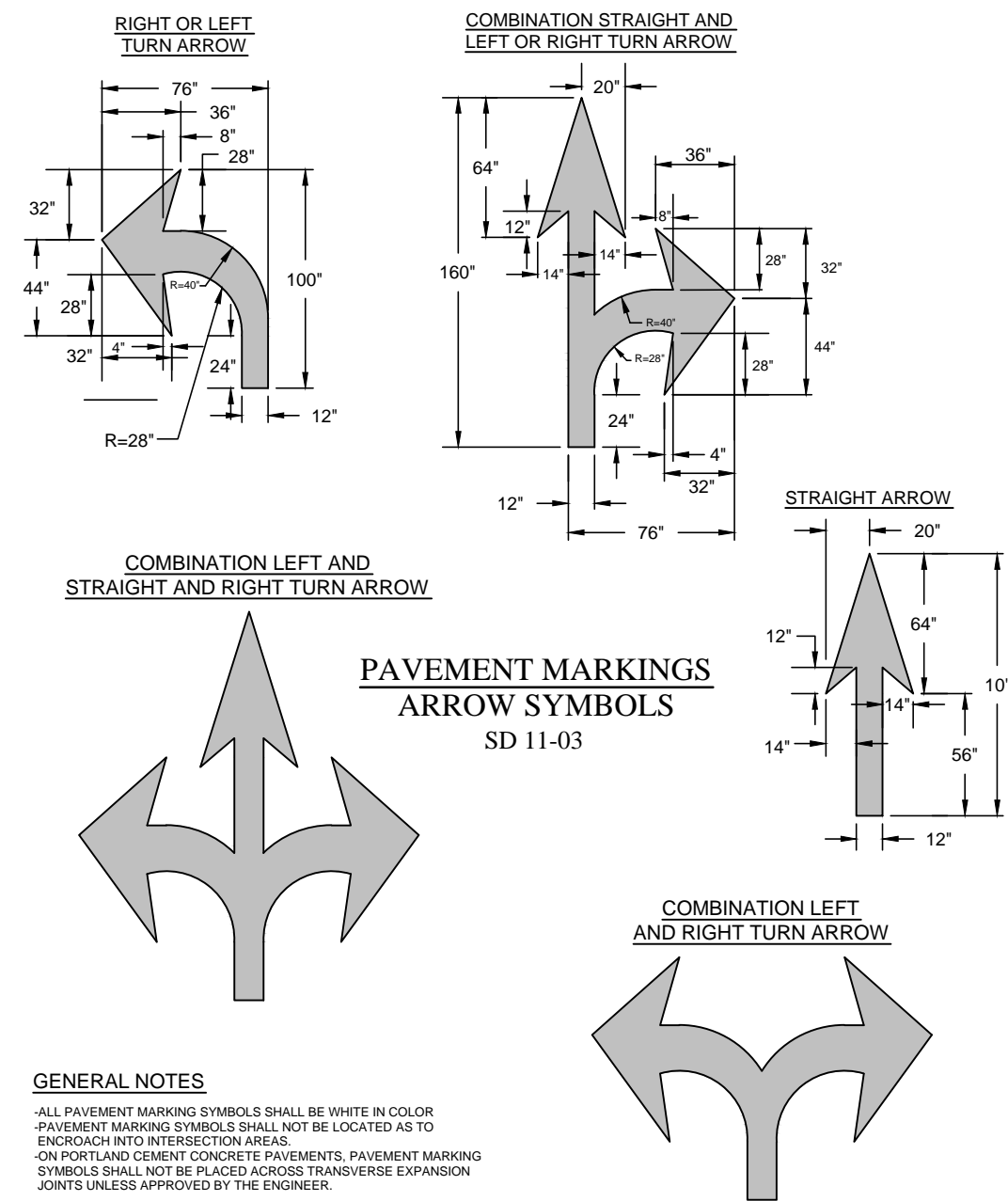
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R2	12/5/12	SUBMITTED WITH TRC COMMENTS ADDRESSED
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SITE PLAN  
SCALE 1" = 30'

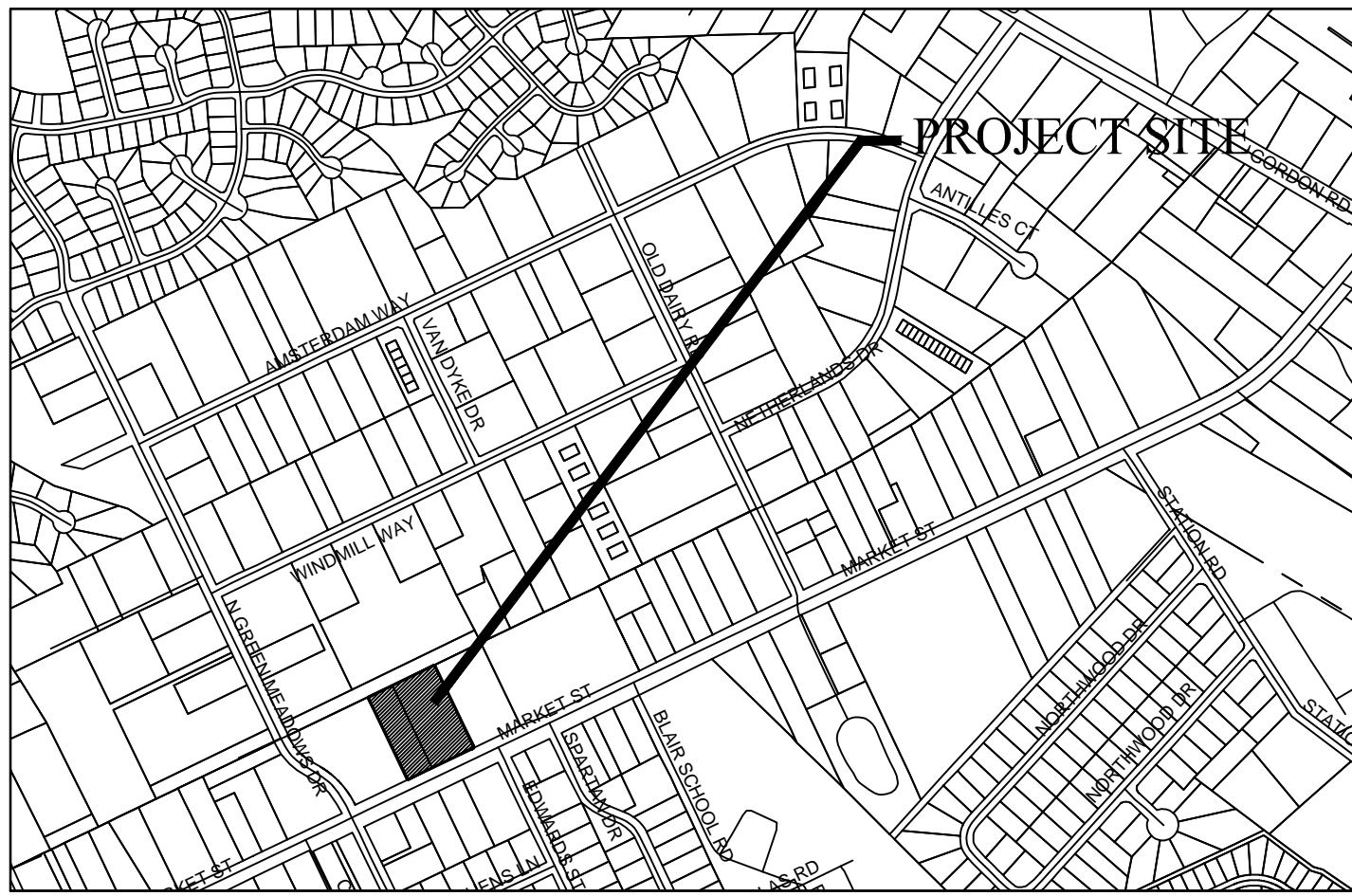
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GENERAL NOTES  
ALL PAVEMENT MARKING SYMBOLS SHALL BE WHITE IN COLOR  
PAVEMENT MARKING SYMBOLS SHALL NOT BE LOCATED AS TO  
ENCROACH INTO INTERSECTION AREAS  
ON PORTLAND CEMENT CONCRETE PAVEMENTS, PAVEMENT MARKING  
SYMBOLS SHALL NOT BE PLACED ACROSS TRANSVERSE EXPANSION  
JOINTS UNLESS APPROVED BY THE ENGINEER.

LEGEND	
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PRO. SPOT ELEVATION	
SILT FENCE	
DRAINAGE RUNOFF FLOW	
LIMITS OF CONSTRUCTION	
ASPHALT	
CONC. PAVEMENT	
GRAVEL	
EDGE OF WOODS	<i>EOOWS</i>
TOP OF BANK	<i>TOB</i>
EDGE OF WATER	<i>EOW</i>
EDGE OF GRAVEL	<i>EOG</i>



VICINITY MAP  
NTS

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LICENSE NUMBER C-2525  
PLANNING - ENGINEERING - PROJECT MANAGEMENT

**JBS**

BRIDFORD SEDGWICK

SITE PLAN

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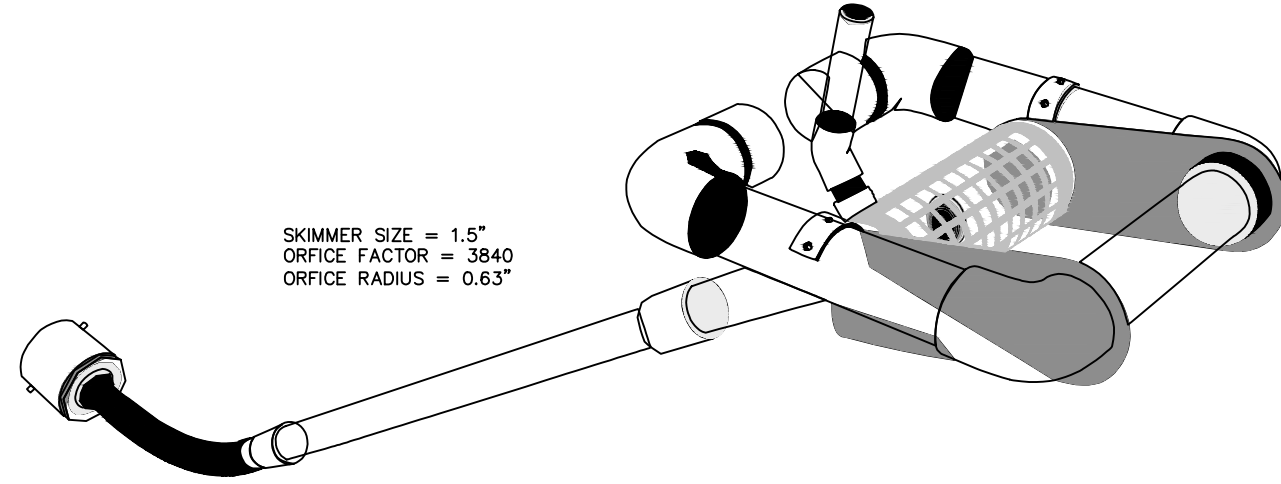
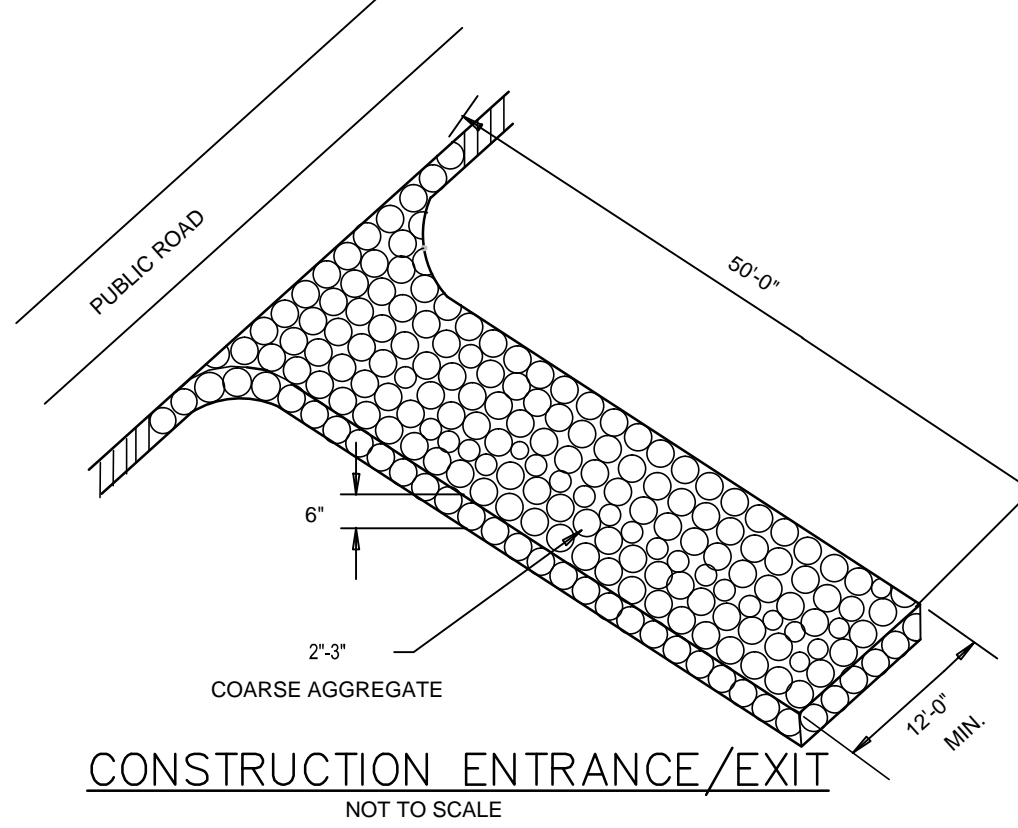
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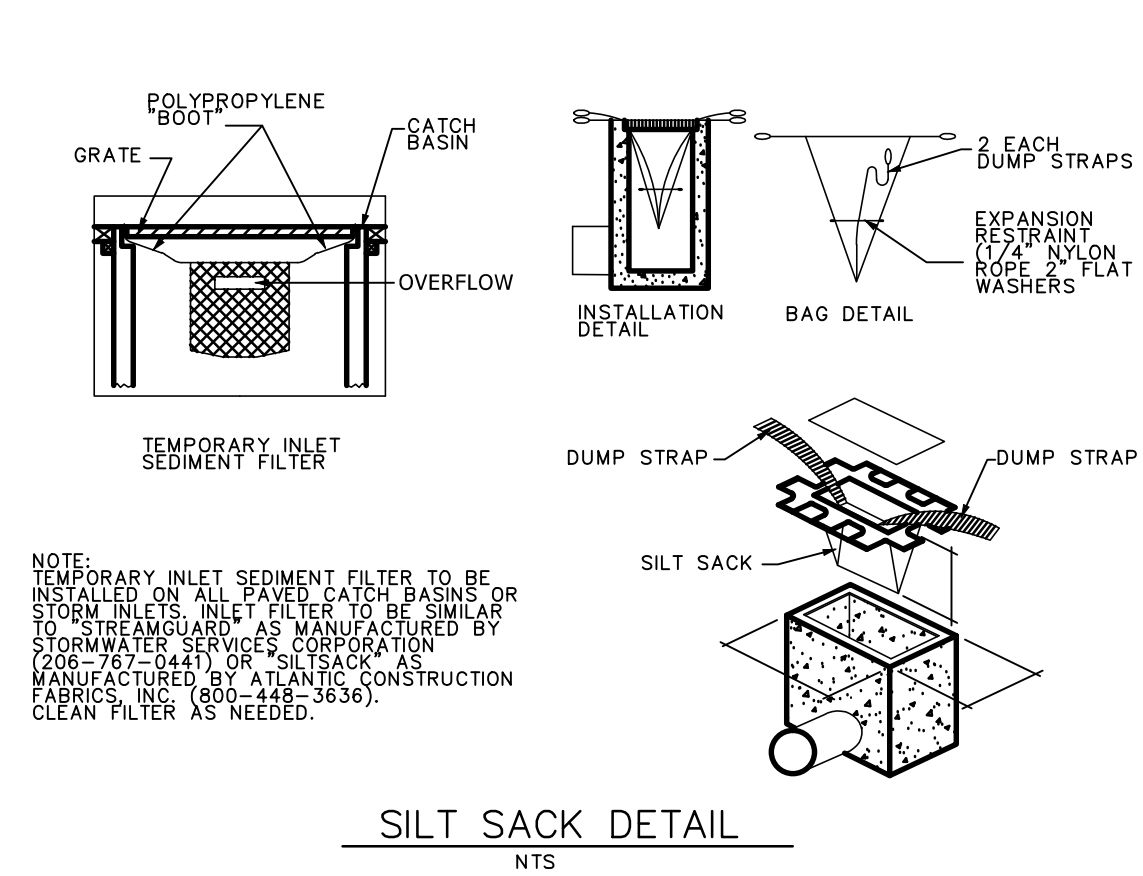
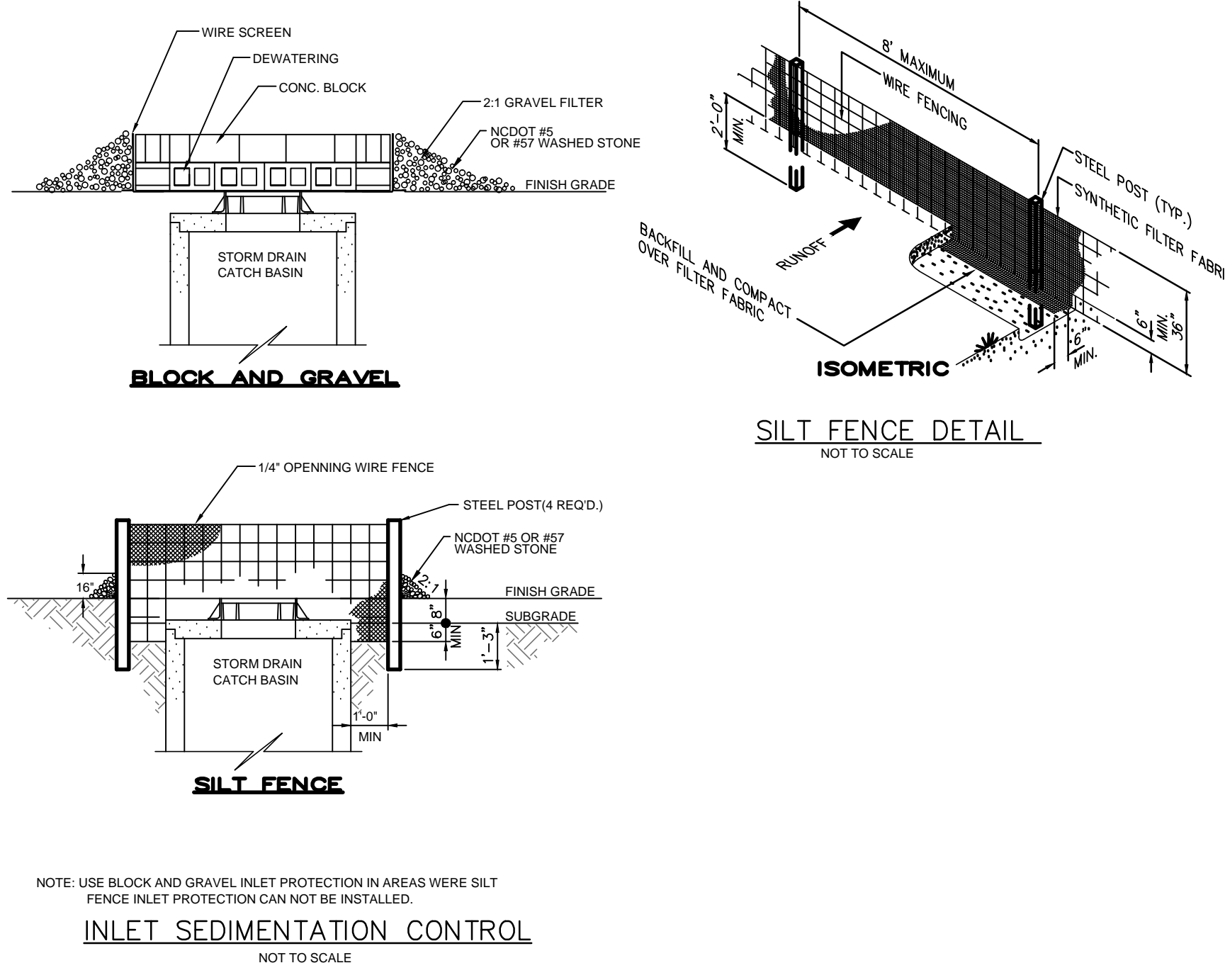
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Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
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**STOP**  
BEFORE YOU GO  
CALL FOR THE RIGHT  
TO THE LAW  
SCALE: 1"=30' (Horiz.)

## GRADING PLAN SCALE 1" = 30'



**FAIRCLOTH FLOATING SKIMMER**  
NOT TO SCALE



LABEL	1) GROUND STABILIZATION		
	SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
	-PERMETER DIKES, DITCHES AND SLOPES	7 DAYS	NONE
	-HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
	SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT SEEPER THAN 2:1 14 DAYS ARE ALLOWED
	SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
	ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

- 2) BUILDING WASTES HANDLING  
-NO PAINT OR LIQUID WASTES IN STREAM OF STORM DRAINS  
-DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE  
-EARTHEN-MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE  
-CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS
- 3) INSPECTIONS  
-SAME WEEKLY INSPECTION REQUIREMENTS  
-SAME RAIN GAUGE & INSPECTIONS AFTER 0.5" RAIN EVENT  
-INSPECTIONS ARE ONLY REQUIRED DURING "NORMAL BUSINESS HOURS"  
-INSPECTION REPORTS MUST BE AVAILABLE ON-SITE DURING BUSINESS HOURS UNLESS A SITE-SPECIFIC EXEMPTION IS APPROVED  
-RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST  
-ELECTRONICALLY-AVAILABLE RECORDS MAY BE SUBSTITUTES UNDER CERTAIN CONDITIONS
- 4) SEDIMENT BASINS  
-OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACES UNLESS DRAINAGE AREA IS LESS THAN 1 ACRE  
-USE ONLY DMO-APPROVED FLOCCULANTS

### NPDES - SPECIFIC PLAN SHEET NOTES

- THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
- THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
- THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
- THE COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY CODE.

### EROSION CONTROL NOTES

- ANY CONSTRUCTION ACTIVITY BEYOND THE 2.7 ACRE LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO FINES.
- CONTRACTOR SHALL REMOVE ALL TREES AND VEGETATION WITHIN ROAD RIGHT OF WAYS UNLESS OTHERWISE DESIGNATED TO REMAIN.
- CONTRACTOR SHALL RAKE AND REMOVE ROOTS, STUMPS, VEGETATION, DEBRIS, EXISTING STRUCTURES ABOVE AND BELOW GRADE, ORGANIC MATERIAL OR ANY OTHER UNSUITABLE MATERIAL WITH IN THE LIMITS OF CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE WITH OWNER AND THEIR GEOTECHNICAL REPRESENTATIVE TO COORDINATE REMOVAL OF ANY UNSUITABLE SOILS.
- CLEARED, GRUBBED, STRIPPED OR OTHER WASTE MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A PROPERLY PERMITTED FACILITY.
- THE CONTRACTOR SHALL FURNISH ANY REQUIRED BORROW MATERIALS FROM A PROPERLY PERMITTED OFF-SITE FACILITY.
- ALL GRADED SLOPES MUST BE SEEDED AND MULCHED WITHIN 21 CALENDAR DAYS OF COMPLETION OF GRADING. STABILIZE AREAS OTHER THAN SLOPES WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER.
- ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF THE COUNTY ENGINEERING DEPARTMENT.
- SLOPES SHALL BE GRADED NO STEEPER THAN 3:1.
- ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UPON BY THE FIELD INSPECTOR, ENGINEER, AND OWNER.
- IF ACTIVE CONSTRUCTION CEASES IN ANY AREA FOR MORE THAN 15 CALENDAR DAYS, ALL DISTURBED AREAS MUST BE SEEDED, MULCHED, AND TACKED.

### GRADING NOTES

- INITIATE EROSION CONTROL SEQUENCE BEFORE BEGINNING CLEARING AND GRADING OPERATIONS.
- CLEAR AREAS TO BE GRADED OF ALL VEGETATION. PROTECT VEGETATION BEYOND GRADING LIMITS.
- STRIP TOPSOIL TO FULL DEPTH IN AREAS TO BE GRADED AND STOCKPILE.
- COMPACT ALL FILL AREAS TO 95% OF MAXIMUM DENSITY.
- ALL BANKS AND SWALE SIDE SLOPES SHALL BE GRADED WITH NO GREATER THAN 3:1 SLOPES.
- ALL AREAS ARE TO BE GRADED SO THAT NO AREAS OF STANDING WATER OCCUR.
- PROPOSED SPOT ELEVATIONS ARE SHOWN AT FINISHED GRADE.
- OPERATOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY IN RELATION TO THE PROPOSED GRADES TO ENSURE DRAINAGE IN THE DIRECTIONS INDICATED ON THE PLAN.

### CONSTRUCTION SEQUENCE

- OBTAIN ALL NECESSARY PERMIT APPROVALS PRIOR TO ANY LAND DISTURBING ACTIVITY.
- HOLD A PRE-CONSTRUCTION MEETING WITH THE EROSION CONTROL INSPECTOR.
- INSTALL THE FAIRCLOTH SKIMMER ON THE "AUTO PALACE" POND. INSTALL CONSTRUCTION ENTRANCE (S) INTO SITE.
- INSTALL SILT FENCE NEXT TO DITCH.
- INSTALL 60" RCP WITH BOXES, CONNECT TO EXISTING SYSTEM. THIS WORK SHOULD BE SCHEDULED FOR DRY WEATHER ONLY AND COMPLETED FIRST PRIOR TO CLEARING AND GRUBBING REST OF SITE.
- INSTALL 18" RCP REACH TO CONNECT TO "AUTO PALACE" POND. IMMEDIATELY INSTALL INLET PROTECTION AROUND INLETS. DO NOT INSTALL 18" RCP REACH TO "BRITT" POND UNTIL SITE IS STABILIZED.
- CLEAR AND GRUB SITE. DIRECT DRAINAGE TOWARD "AUTO PALACE" PIPING SYSTEM.
- CONSTRUCT BUILDING PAD.
- STABILIZE SITE WITH STONE BASE.
- INSTALL 18" RCP PIPE REACH TOWARD "BRITT" POND AFTER BASE FOR PARKING LOT IS INSTALLED.
- PROVIDE TEMPORARY PROTECTION MEASURES AND DEVICES AS REQUIRED UNTIL UNDERGROUND UTILITIES AND PAVEMENT SECTION IS COMPLETE AND FINAL GRADES ARE STABILIZED WITH TEMPORARY VEGETATIVE COVER.
- STABILIZE (FERTILIZE, SEED, AND MULCH) ALL DISTURBED AREAS AS SOON AS FINAL GRADES ARE ESTABLISHED.
- ONCE CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED, REMOVE TEMPORARY EROSION CONTROL MEASURES, REMOVE SEDIMENT FROM SEDIMENT BASIN AND CONSTRUCT BIORETENTION.

### EROSION CONTROL MAINTENANCE PLAN

- ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RAINFALL - PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
- INSPECT SEDIMENT TRAPS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN DESIGNATED DISPOSAL AREA, AND REPLACE THE PART OF THE GRAVEL FACING THAT IS IMPAIRED BY SEDIMENT.
- SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
- ALL AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
- GRAVEL CONSTRUCTION ENTRANCE TO BE CLEANED WHEN SEDIMENT ACCUMULATIONS ARE VISIBLE OR SEDIMENT IS DEPOSITED ON THE ASPHALT AND STONE. WILL BE PERIODICALLY TOP DRESSED WITH 2 INCHES OF #4 STONE TO MAINTAIN 6 INCH DEPTH.
- INSPECT SWALES (PERMANENT DIVERSIONS) AFTER EVERY RAINFALL DURING THE CONSTRUCTION OPERATION. IMMEDIATELY REMOVE ANY OBSTRUCTIONS FROM THE FLOW AREA AND REPAIR THE SWALE. CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES.

**LEGEND**

EXIST. SPOT ELEVATION

PRO. SPOT ELEVATION

SILT FENCE

DRAINAGE RUNOFF FLOW

LIMITS OF CONSTRUCTION

ASPHALT

CONC. PAVEMENT

GRAVEL

EDGE OF WOODS **EOWDs**

TOP OF BANK **TOB**

EDGE OF WATER **EOw**

EDGE OF GRAVEL **EOG**

DESIGN BY: BDS  
DRAWN BY: BDS  
CHECKED BY: BDS  
DATE: NOV, 2012

**JBS CONSULTING, PA**  
7332 Cotesworth Drive  
Wilmington, NC 28045  
(910) 619-9990  
LICENSE NUMBER C-2525  
PLANNING - ENGINEERING - PROJECT MANAGEMENT

**G AND G PROPERTIES 2, LLC**  
JOHN S. GILLILAN, AGENT  
219 COLLEGE ROAD  
WILMINGTON, NC 28406

**GRADING, DRAINAGE & EROSION CONTROL**  
FIAT OF WILMINGTON  
6421 MARKET STREET  
WILMINGTON, NORTH CAROLINA

SHEET  
**C3**  
JOB NO. 032-011



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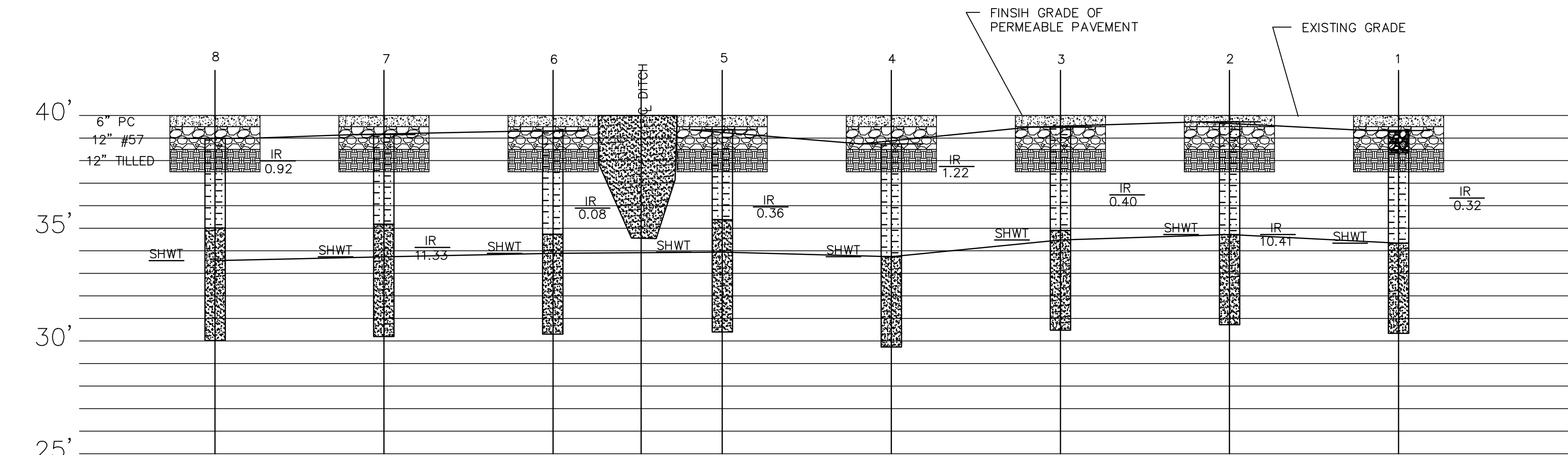
2. THERE SHALL BE NO ENCUMBRANCES WITHIN THE NCDOT RIGHT OF WAY.
3. ALL MATERIALS UTILIZED IN THE CONSTRUCTION OF THE UTILITIES WITHIN THE PUBLIC RIGHT OF WAY SHALL BE NCDOT APPROVED MATERIALS.
4. CONTRACTOR IS TO PROVIDE ALL NECESSARY TRAFFIC AND SAFETY CONTROL DEVICES IN WORK AREAS.
5. FIELD VERIFY EXISTING UTILITIES FOR CONFLICTS PRIOR TO CONSTRUCTION, NOTIFY ENGINEER AT 910-619-9990 BEFORE PROCEEDING WITH CONSTRUCTION.
6. CONTRACTOR IS TO NOTIFY (AT A MINIMUM) THE FOLLOWING COMPANIES FOR LOCATION SERVICES:  
ULCO.....1-800-632-4949, 48 HOURS IN ADVANCE  
BELL SOUTH.....1-800-392-8712 (STATE DVAULT)
7. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING (IF REQUIRED) WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION.
8. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS OF WAY AND FOR DRIVEWAY ARE TO BE THERMO PLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
9. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING (RICHE BROWN) TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. ALL REQUESTED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
10. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS
11. TRAFFIC ENGINEERING TO BE NOTIFIED AT 341-788 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
12. ANY BROKEN OR MISSING SIDEWALK PANELS WILL BE REPLACED.
13. CONTACT KAREN DIXON AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS
14. PROJECT SHALL COMPLY WITH CPFWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELEASED UNLESS ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL.
15. IF THE CONTRACTOR DESIRES CPFWA WATER FOR CONSTRUCTION HE SHALL APPLY MIN ADVANCE FOR THIS SERVICE AND MUST SUPPLY A RP2 BACKFLOW PREVENTION DEVICE ON THE DEVELOPERS SIDE OF THE WATER METER BOX.
16. ANY IRRIGATION SYSTEM SUPPLIED BY CPFWA SHALL COMPLY WITH THE CPFWA CROSS CONNECTION REGULATIONS

Approved Construction Plan	
Name	Date
Planning	
Traffic	
Fire	
CFPUA	

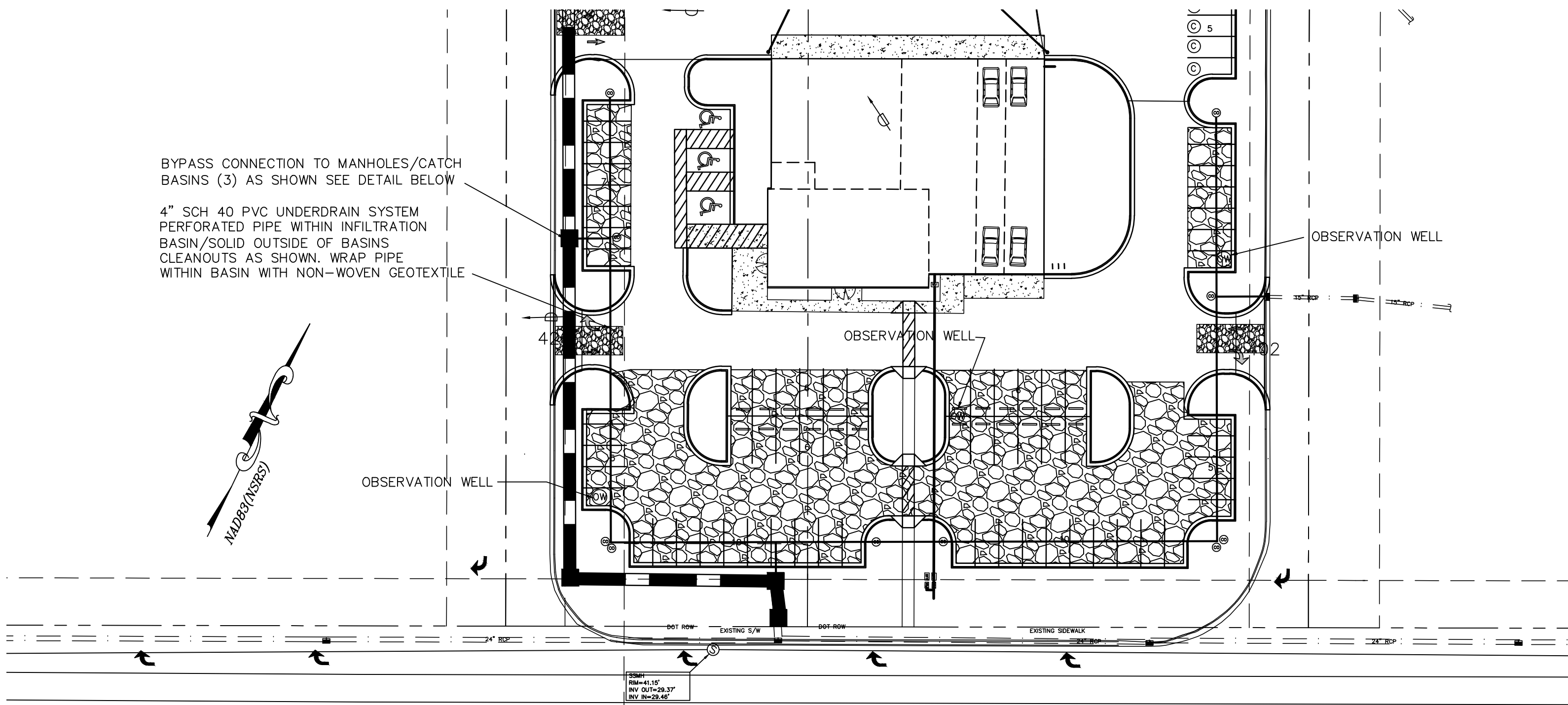


REVISION	DATE	NUMBER	DESCRIPTION
R4	2/21/13	1	RELEASED FOR S&E REVIEW
R2	12/2/12	2	SUBMITTED WITH TRC COMMENTS ADDRESSED
R1	11/1/12	3	SUBMITTED FOR TRC REVIEW

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SOIL PROFILES  
NTS

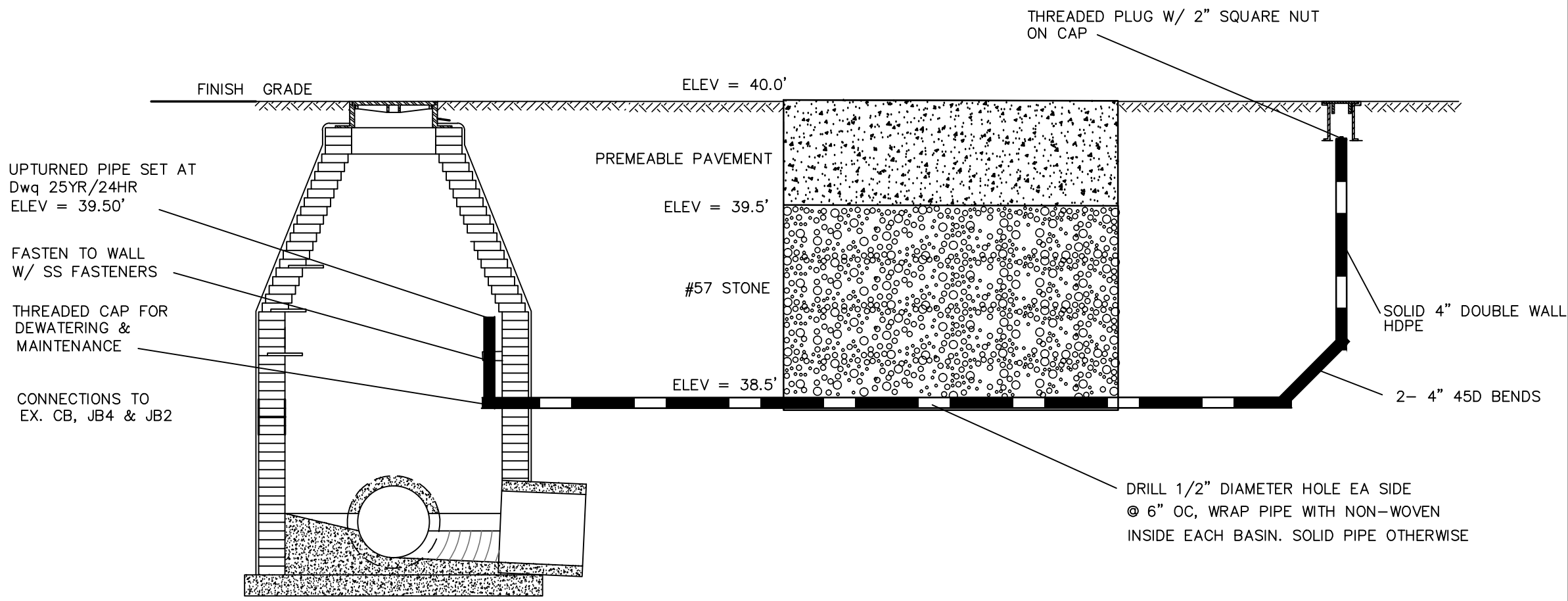


INFILTRATION PLAN  
SCALE 1" = 40'

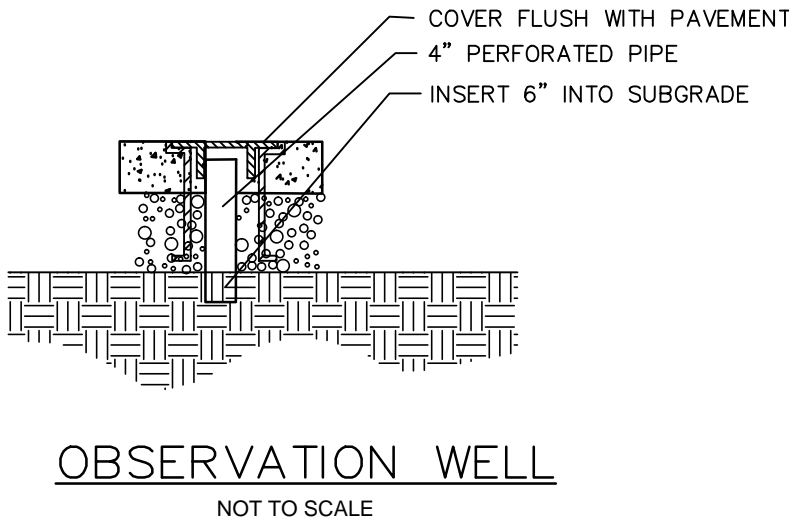


NOTE: EXAMPLE OF SIGN TO BE PLACED WHERE SHOWN ON THE PLANS. SIGN 18" X 24" ON STANDARD METAL BACKING AND MOUNTED WITH STANDARD STREET SIGN MATERIALS AND METHODS.

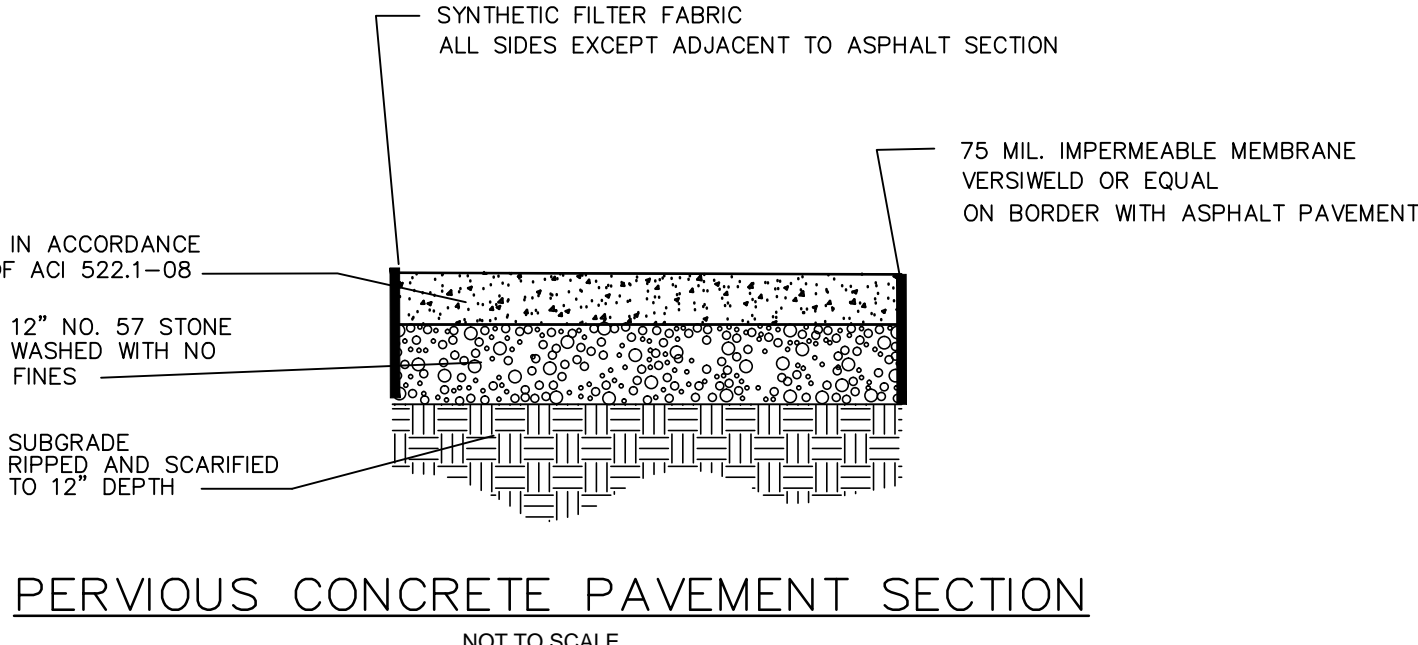
EXAMPLE PERMEABLE PAVEMENT SIGN  
NOT TO SCALE



INFILTRATION BED UNDERDRAIN DETAIL  
NOT TO SCALE



OBSERVATION WELL  
NOT TO SCALE



PERVIOUS CONCRETE PAVEMENT SECTION  
NOT TO SCALE

NOTE TO CONTRACTOR  
DURING CONSTRUCTION, PRIOR TO INSTALLATION OF THE SUB-GRADE, INFILTRATION/HYDRAULIC CONDUCTIVITY TESTING MUST BE PERFORMED IN THE SURFACE OF THE UNDERLYING SOIL. TWO TEST SPOTS, RANDOM SHALL BE PERFORMED. RESULTS OF TESTING TO BE REVIEWED BY CIVIL ENGINEER PRIOR TO THE INSTALLATION OF THE SUB-GRADE STONE.

PONDING CALCULATIONS

T = PONDING TIME (DAYS)

P = DEPTH OF DESIGN STORM (INCHES)

R = A(A)/A(P) - RATIO OF IMPERVIOUS BUA TO PERMEABLE PAVEMENT

SF = SAFETY FACTOR (0.2)

I = MEASURED IN-SITU SOIL INFILTRATION RATE (IN/HR)

$$T = \frac{P(1+R)}{24 \cdot SF \cdot I}$$

P	A (TOTAL)	A(A)	A(P)	R	SF	I	PONDING TIME
8.2	36742	18047	18695	0.97	0.2	1.1	3.1

AGGREGATE DEPTH TO INFILTRATE THE 25YR/24HR STORM EVENT

D(25) = AGGREGATE DEPTH TO INFILTRATE THE 25YR/24 HR STORM

P(25) = rainfall depth for 25yr/24hr storm (inches)

R = A(A)/A(P) - RATIO OF IMPERVIOUS BUA TO PERMEABLE PAVEMENT

d = Storm Duration (hrs)

i = MEASURED IN-SITU SOIL INFILTRATION RATE (IN/HR)

SF = SAFETY FACTOR (0.2)

N = PERCENT VOIDS IN GRAVEL AGGREGATE (40%)

$$D(25) = \frac{P(25)(1+R)}{n} - d \cdot i \cdot SF$$

P	A(A)	A(P)	R	d	i	SF	N	D(25)
8.2	18047	18695	0.97	24	1.1	0.2	0.4	27

AGGREGATE DEPTH FOR WATER QUALITY STORM D(WQ)

D(WQ) = DEPTH OF AGGREGATE REQUIRED

P = DEPTH OF DESIGN STORM (INCHES)

R = A(A)/A(P) - RATIO OF IMPERVIOUS BUA TO PERMEABLE PAVEMENT

N = PERCENT VOIDS IN GRAVEL AGGREGATE (40%)

$$D(WQ) = \frac{P(1+R)}{N}$$

P	A(A)	A(P)	R	N	D(WQ)
1.5	18047	18695	0.97	0.4	7

DESIGNED BY: BDS  
DRAWN BY: BDS  
CHECKED BY: BDS  
DATE: NOV, 2012

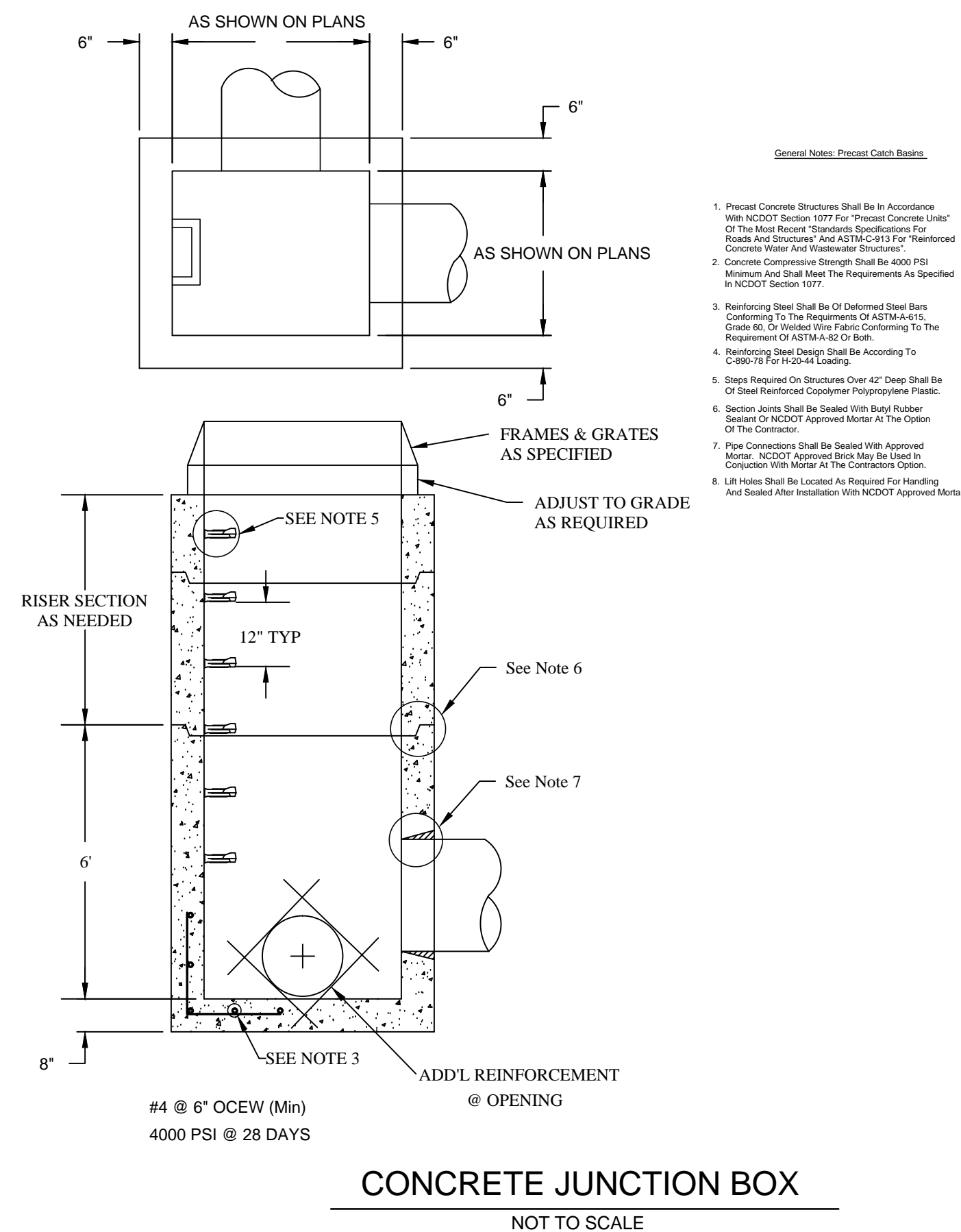
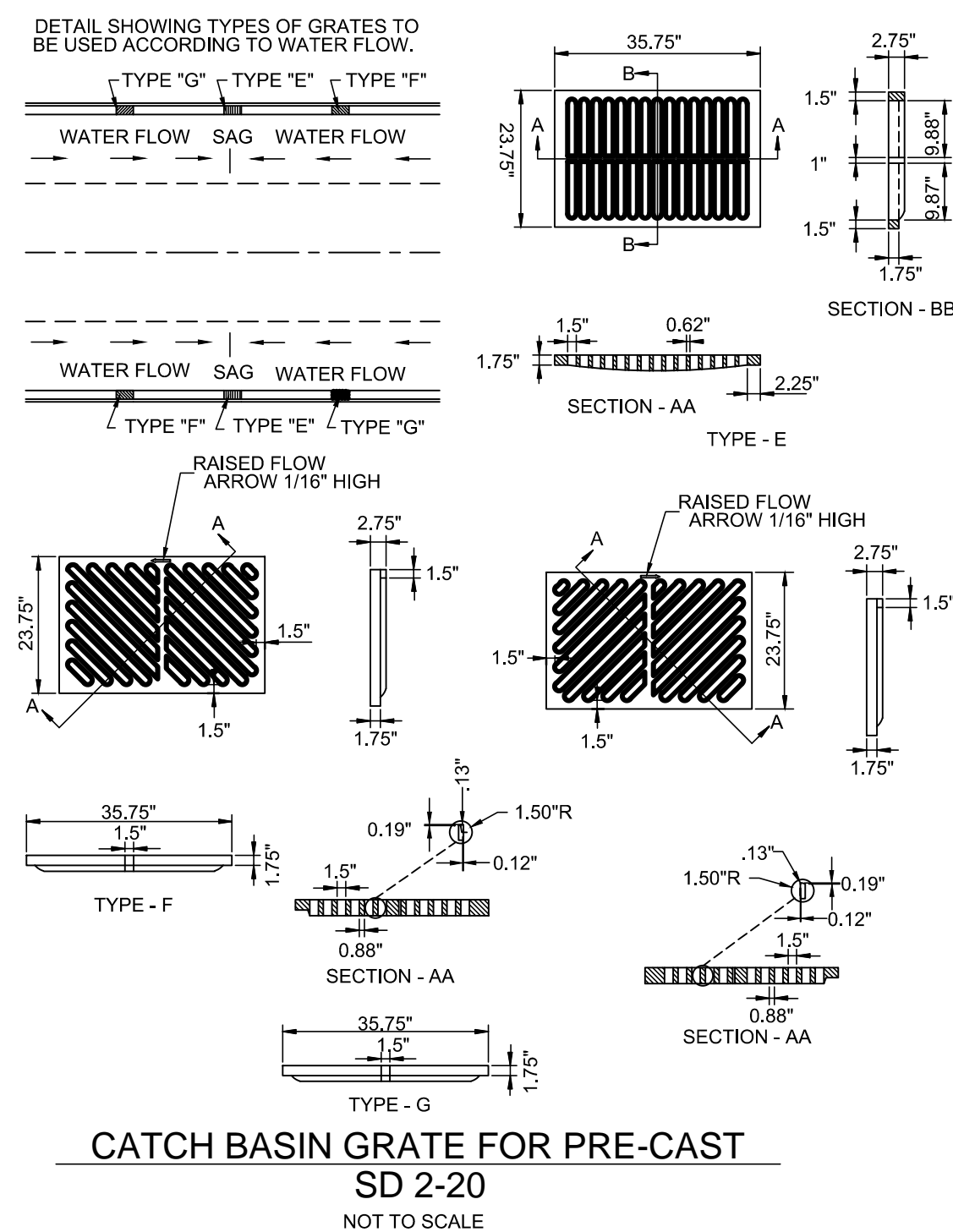
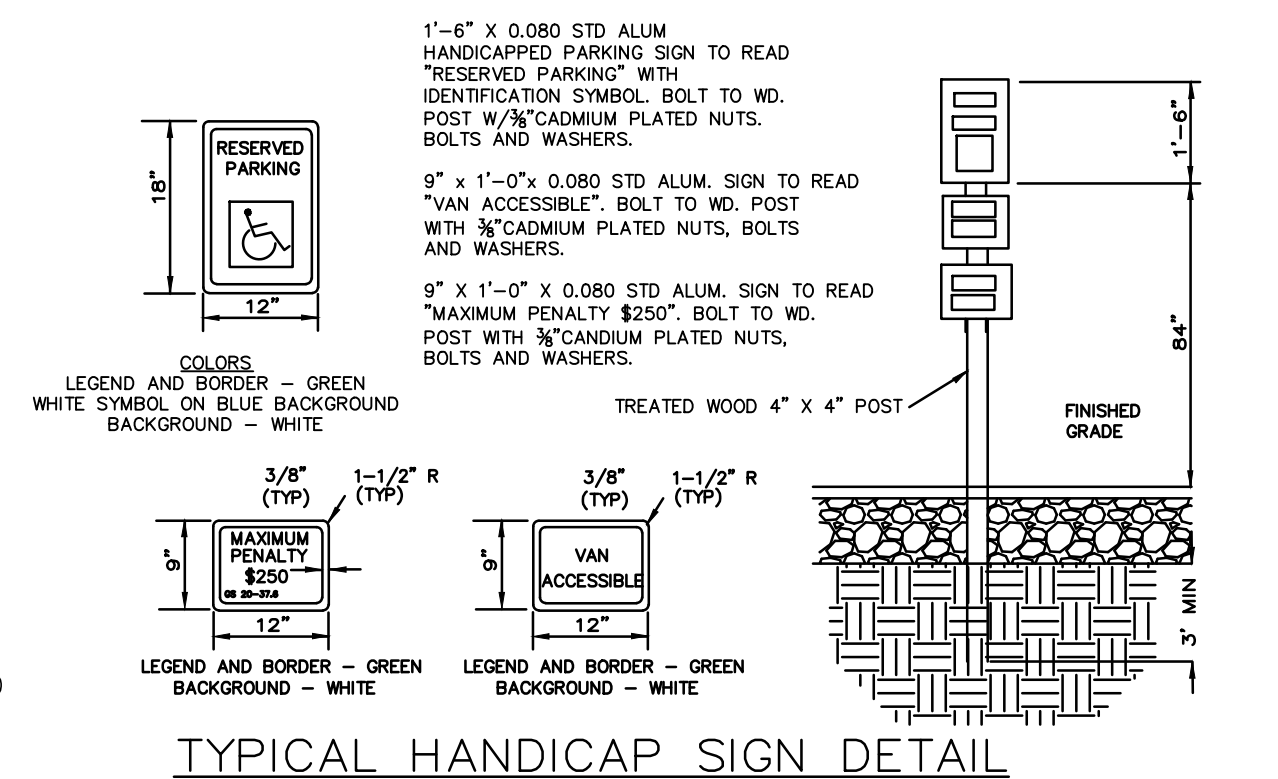
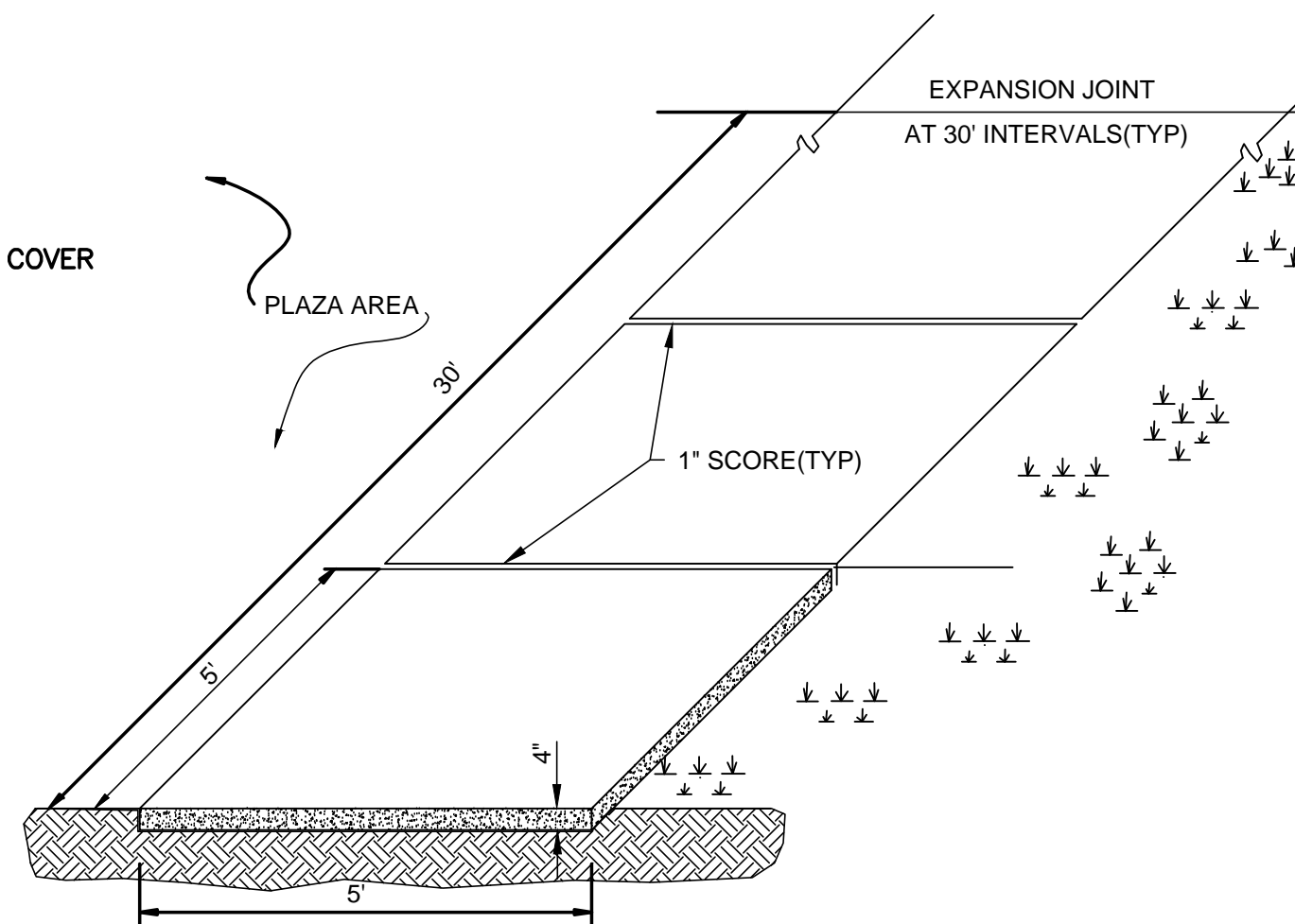
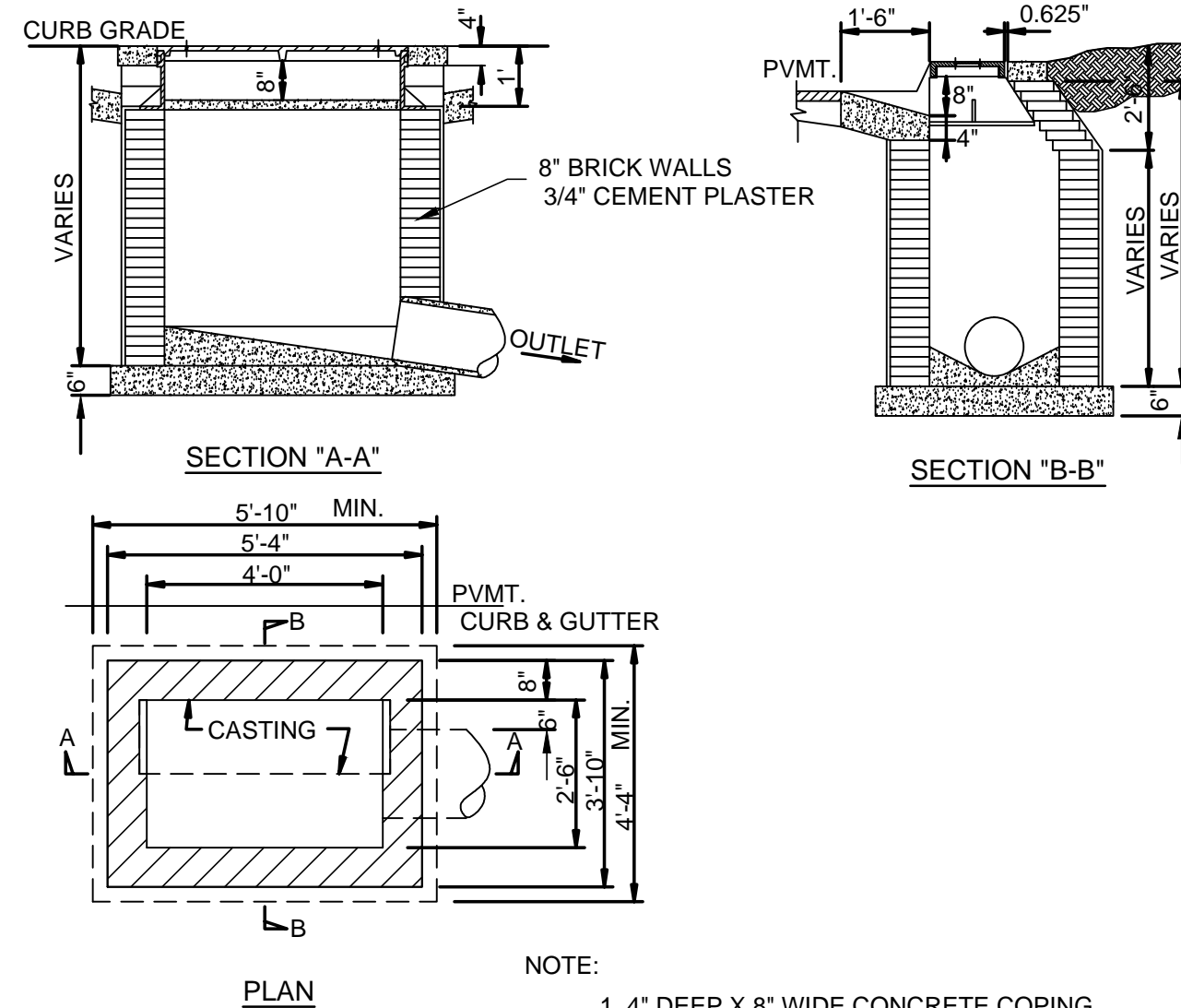
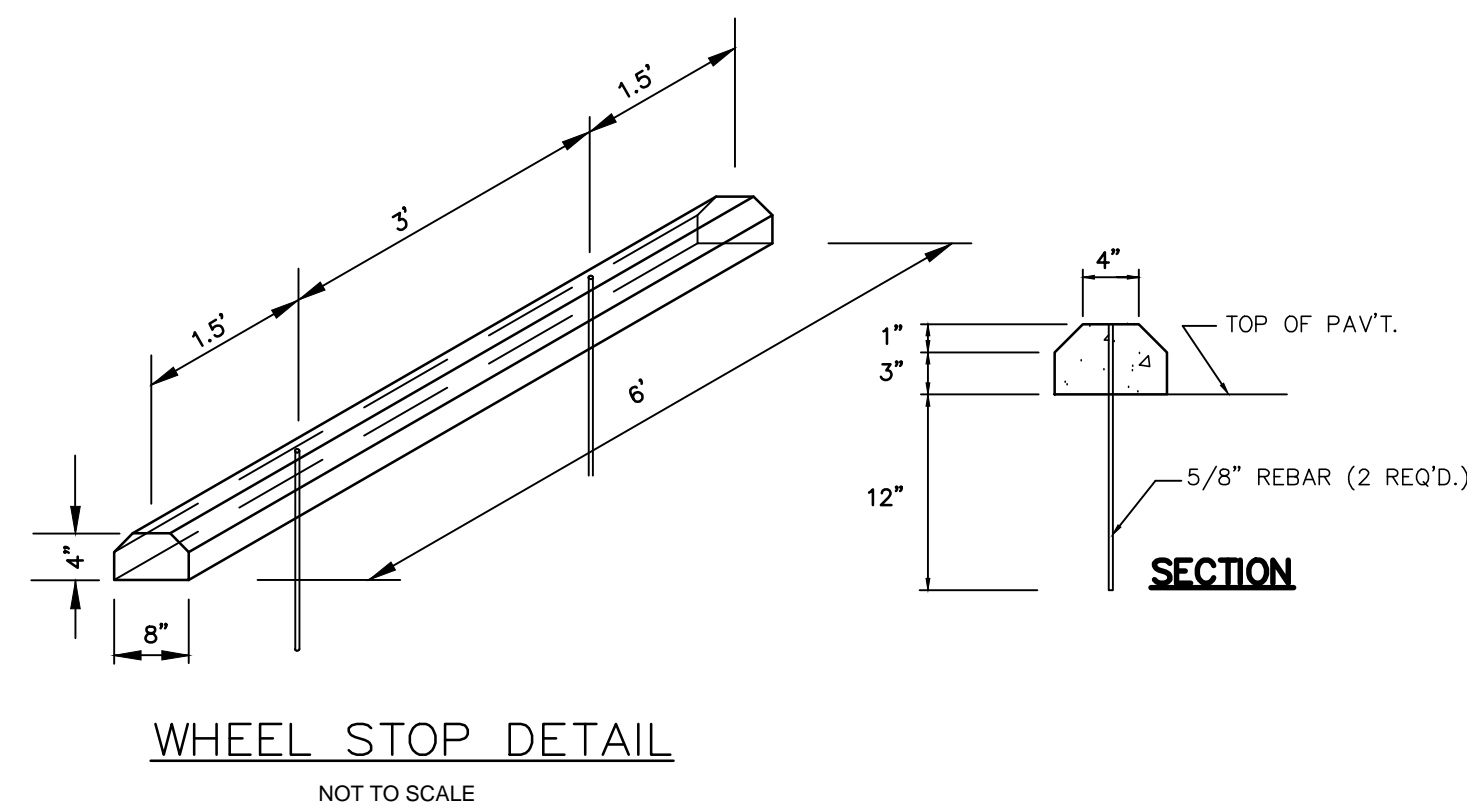
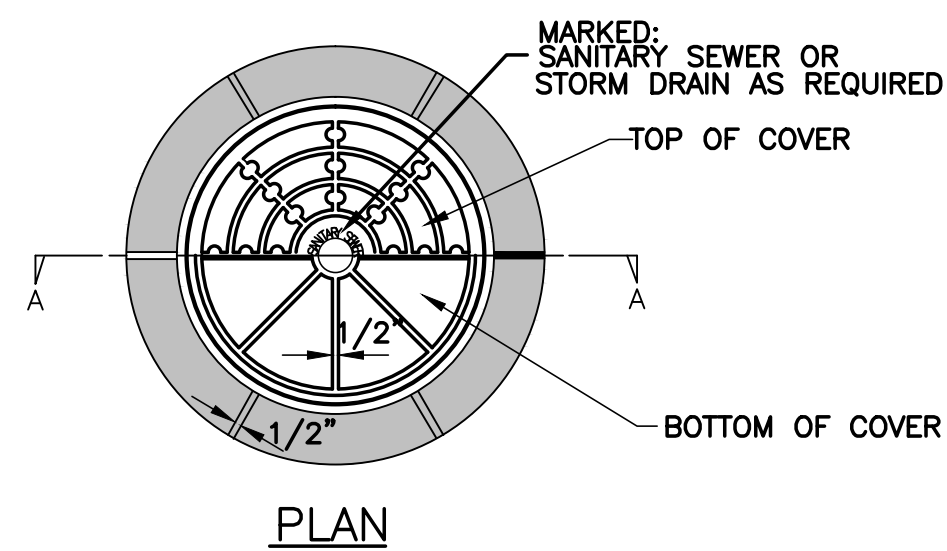
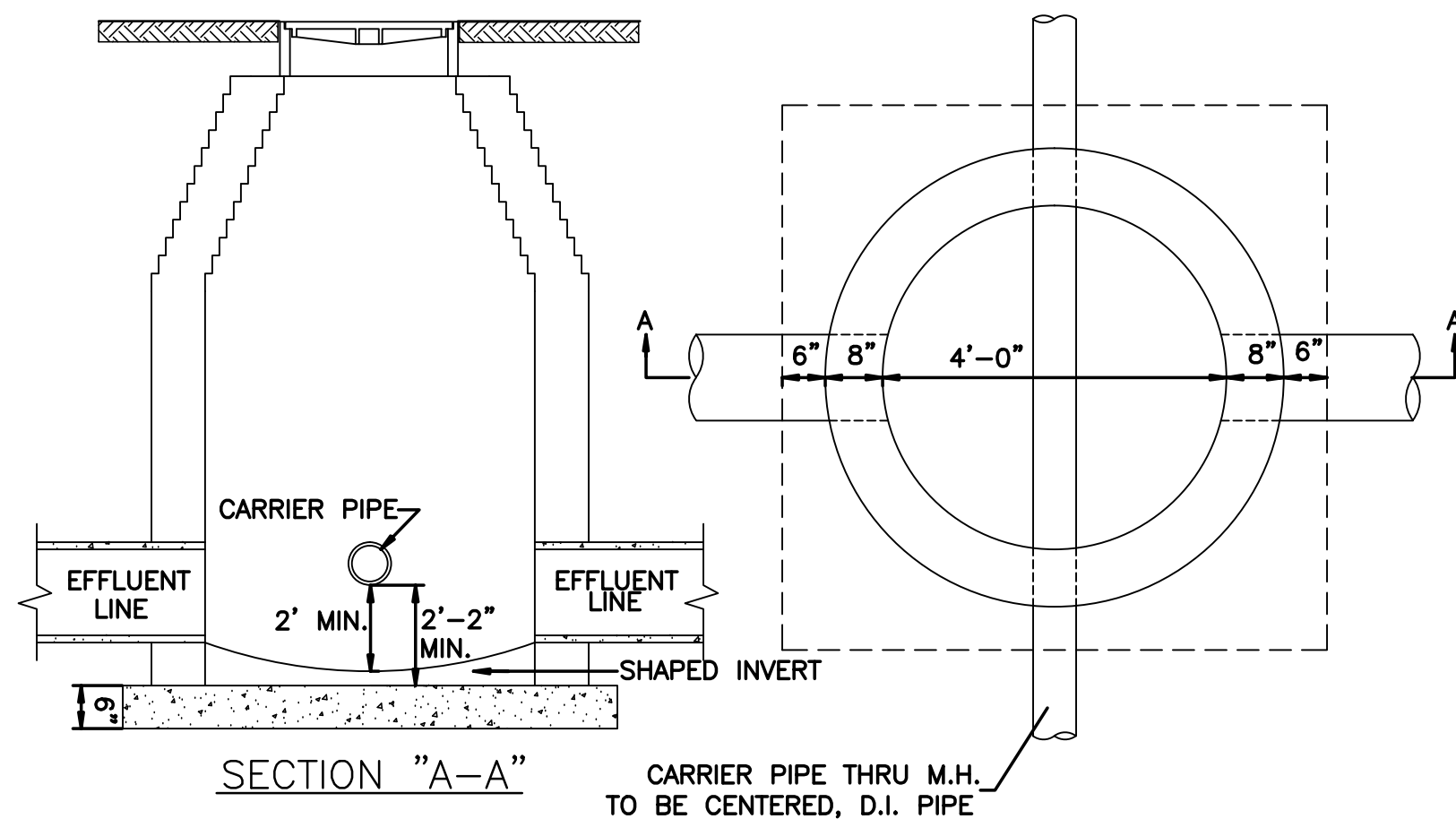
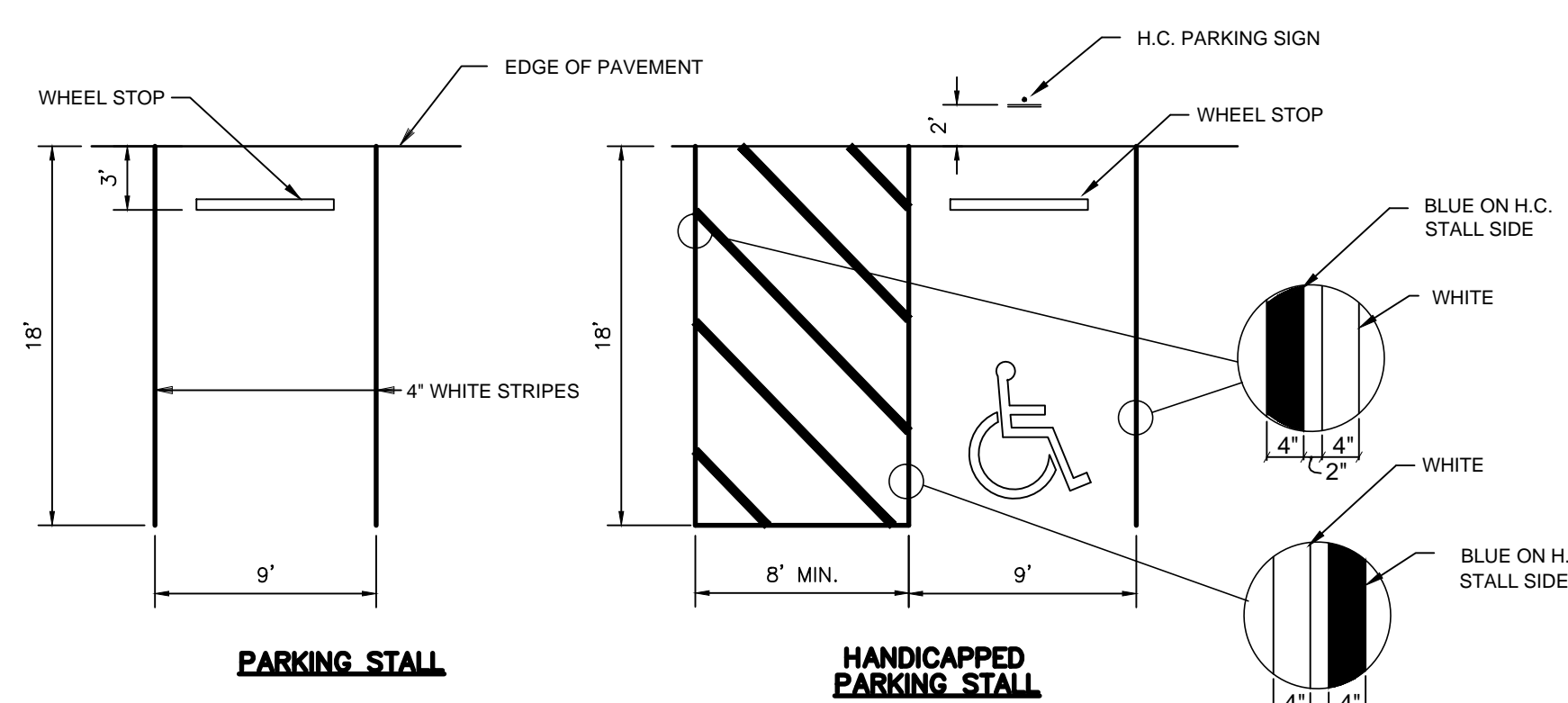
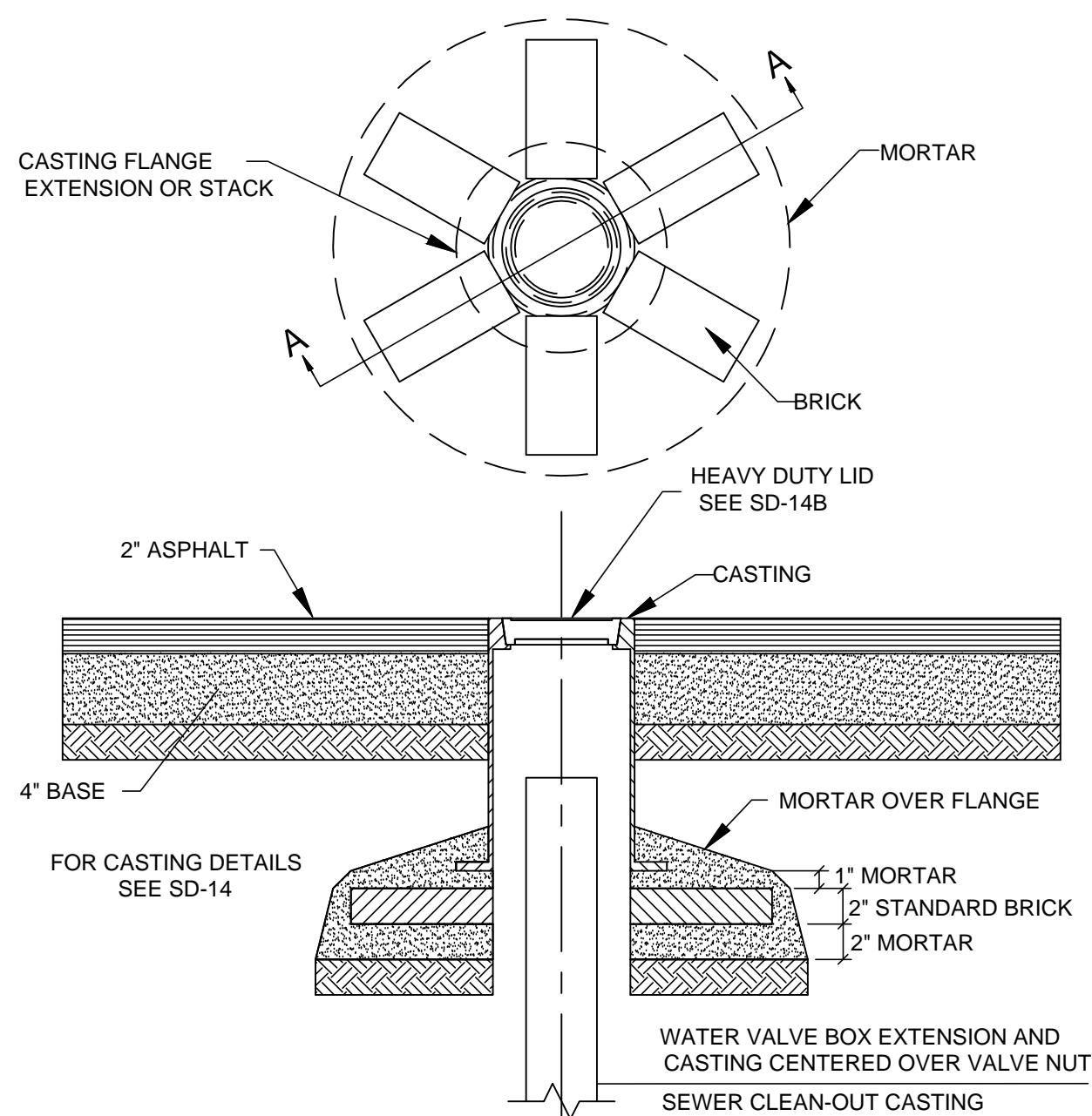
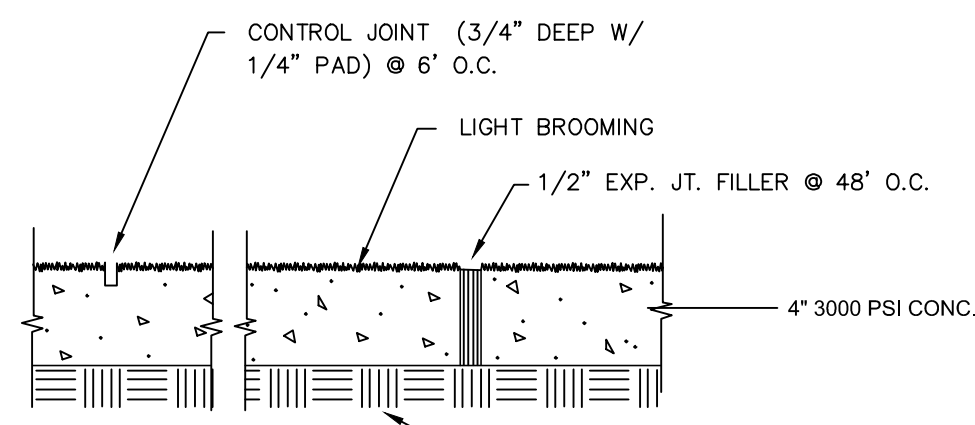
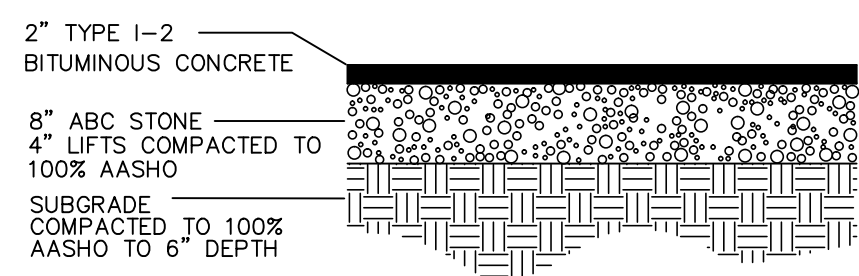
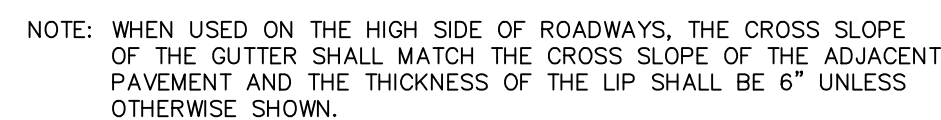
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**INFILTRATION SYSTEM**  
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WILMINGTON, NORTH CAROLINA

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WILMINGTON, NC 28406

SHEET  
**C5**  
JOB NO. 032-011





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